SCIENCE FOR THE PEOPLE

SCIENCE FOR AWARENESS

COMMUNICATING SCIENCE FOR AND TO THE PEOPLE

RICHARD P. BURGOS
FORTUNATO T. DE LA PEÑA

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PREFACE: LETTER FROM THE DIRECTOR

Secretary Boy, as we fondly call our beloved Secretary, organized his first management committee meeting as the Department of Science and Technology (DOST) Secretary on August 22, 2016. He met the heads of DOST agencies and Regional Offices, most of whom he had worked with at the department for many years. Candidly, he admitted to some challenges.

"*Ano ba yang hugot na yan? Hindi ko naiintindihan yan*." [What is "hugot"? I don't understand it.]

Whereas the Philippines had become a Facebook country and millennials accounted for the majority of our population, social media posed a real communication challenge for the department. It was time to shift gears and engage our predominantly millennial public using their preferred social media platforms.

In that meeting, I moved for the adoption of #ScienceForThePeople as the official hashtag on all our social media pages. It effectively crystallizes the mandates of the DOST. It is short, catchy, and relatable. Its initials, SFTP, also happen to be the initials of Secretary Fortunato Tanseco de la Peña. It was unanimously carried. Thereafter, Science for The People became a battle cry, as it were, of the entire DOST family. Our digital transformation in communications had begun. And so did our mission to be more inclusive, to get out of our comfort zones and truly engage more people in the countryside.

Today, more than 78,000 people are posting on Facebook using the hashtag. Our Mancom members have fully embraced social media and digital technology and led their agencies and regional offices to do the same. In fact, six of our social media platforms already have a total reach of 30 million. Our media coverage in 2021 alone generated an ad value of PHP 9.8 billion (around USD 196 million) and a PR value of PHP 13.5 billion (around USD 270 million). More importantly, national awareness of science, technology, and innovation rose 683% from 6% in 2017 to 47% by the end of 2022.

More of this transformation needs to be done.

Today, I am happy to invite you to run through the pages of "Science for Awareness," one of the volumes of the Science for the People book series, to relive our process of transformation and give you a better glimpse and a greater appreciation of how communicating science to the public makes a huge difference to our society.

The following pages and chapters capture the highs and lows, the joys, challenges, and breakthroughs in the last six years of communicating Science For The People.

In fact, it has been an amazing six years in the driver's seat of the bus of the DOST-STII, and I want to eternally thank all those who have been part of our incredible journey.

No, we did not just cruise. We flew high. The numbers do not lie.

RICHARD P. BURGOS

DIRECTOR
SCIENCE AND TECHNOLOGY INFORMATION
INSTITUTE (DOST-STII)

ACRONYMS

AAL	Adopt a Library
AChO	Ateneo Chemistry Olympiad
AdMU IPC	Ateneo de Manila University Institute of Philippine Culture
AM	Additive Manufacturing
AMCen	Advanced Manufacturing Center
AMIC	Asian Media Information and Communication Centre
BIST	Business Innovation through S&T
BRITER	Basic Research Information Translation for Empowerment in the Regions
CBB	Closing Billboard
CBRC.TV	Carl Balita Review Center TV
CC	Climate Change
CCU	Corporate Communication Unit
CEST	Community Empowerment thru Science and Technology
CHED	Commission on Higher Education
CHMSC	Carlos Hidalgo Memorial State College
CMMA	Catholic Mass Media Awards
CNN	Cable News Network, Inc.
COARE	Computing and Archiving Research Environment
CPC	Cost per Click

CPD	Continuing Professional Development
CRADLE	Collaborative Research and Development to Leverage Philippine Economy
CRPD	Communication Resources and Production Division
CS	Caesar A. Saloma, Ph.D.
CSC	Civil Service Commission
CSFTP	Communicating Science for the People
CTU	Cebu Technological University
DA	Department of Agriculture
DC	Development Council
DepEd	Department of Education
DICT	Department of Information and Communication Technology
DOOH	Digital-Out-of-Home Philippines
DOST	Department of Science and Technology
DOST-ASTI	Department of Science and Technology - Advanced Science and Technology Institute
DOST-FNRI	Department of Science and Technology - Food and Nutrition Research Institute
DOST-FPRDI	Department of Science and Technology - Forest Products Research and Development Institute
DOST-GIA	Department of Science and Technology - Grants-In-Aid
DOST-ITDI	Department of Science and Technology - Industrial Technology Development Institute

DOST-MIRDC	Department of Science and Technology - Metals Industry Research and Development Center
DOST-NRCP	Department of Science and Technology - National Research Council of the Philippines
DOST-PAGASA	Department of Science and Technology - Philippine Atmospheric, Geophysical and Astronomical Services Administration
DOST-PCHRD	Department of Science and Technology - Philippine Council for Health Research and Development
DOST-PCIEERD	Department of Science and Technology - Philippine Council for Industry, Energy and Emerging Technology Research and Development
DOST-PHIVOLCS	Department of Science and Technology - Philippine Institute of Volcanology and Seismology
DOST-PNRI	Department of Science and Technology - Philippine Nuclear Research Institute
DOST-PTRI	Department of Science and Technology - Philippine Textile Research Institute
DOST-SEI	Department of Science and Technology - Science Education Institute
DOST-STII	Department of Science and Technology - Science and Technology Information Institute
DOST-STII OLLP	DOST-STII Online Library Literacy Program
DOST-TAPI	Department of Science and Technology - Technology Application and Promotion Institute

DRRCC	Disaster Risk Reduction and Climate Change
DRRM	Disaster Risk Reduction and Management
DTMP4 Code	Doppler Tolerant Modified P4 Code
DZRB	Radio ng Bayan
DZRH	Radio Heacock
EK	Enchanted Kingdom
FAD	Finance and Administrative Division
FD	Fabian M. Dayrit, Ph.D.
FERCAP	Forum for Ethical Research Committee in Asia and Western Pacific Region
FIC	Food Innovation Center
FIESTA	Farms and Industry Encounters through Science and Technology Agenda
FIRSt	Food and Nutrition Information Resource Station
FWD PH	Innovations for Filipinos Working Distantly from the Philippines
GAA	General Appropriations Act
GAD	Gender and Development
GALING	Good Agri-Aqua Livelihood Initiatives towards National Goals
GIDCA	Geographically Isolated and Disadvantaged and Conflict-Affected Areas
GII	Global Innovation Index
GLC Tool	Gender Language Checker Tool
GMA	Global Media Arts

GMM	General Membership Meeting
GNN	Global News Network
GRIND	Grassroots Innovation for Inclusive Development
GSAT	Global Satellite TV
HAS	Halal Assurance System
HeaRT	Health Research and Technology
HEIs	Higher Educational Institutions
HPC	High Performance Computing
HRDP	Human Resources Development Program
HRMO	Human Resources Management Officers
IAS	Internal Audit Service
IBM	International Business Machines
iChallenge	Innovation Challenge
ICT	Information and Communication Technology
IEC	Information, Education and Communication
IEET	Industry, Energy, and Emerging Technology
I-FIT	Iloilo Federation of Information Technology
iLounge	Innovation Lounge
IMC	Integrated Marketing Communication
IPA	International Publications Award
iPel	Integrated Philippine e-Library

IPR	Intellectual Property Rights
IPRA	International Public Relations Association
IPs	Indigenous Peoples
IRAD	Information Resources and Analysis Division
iSTART	Innovation Science and Technology for Accelerating Regional Technology-Based Development
ISTE	Institutional Support for Technology Exposition
ITU	Information and Technology Unit
JIF	Journal Impact Factor
KALIPUNAN	Kaalaman sa Agham at Lipunan
KIST	Knowledge Innovation Science and Technology
K-Resources	Knowledge Resources
LGA	Local Government Academy
LGUs	Local Government Units
LIS	Library Information Service
MAP-ABCD	Management Association of the Philippines - Agribusiness and Country Development
MATDEV	Materials Development Laboratory
MELC	Most Essential Learning Competencies
MISPS	Management Information Systems and Planning Section

MITHI-HEC	Medium-Term Information and Communications Technology Harmonized Initiatives - Higher Education Cluster
MMIC	Modular Multi-Industry Innovation Center
MOA	Memorandum of Agreement
MOC	Memorandum of Commitment
MSMEs	Micro, Small and Medium Enterprises
MV	Media Value
NAST	National Academy of Science and Technology
NCR	National Capital Region
NEDA	National Economic and Development Authority
NGAs	National Government Agencies
NIBRA	National Integrated Basic Research Agenda
NIC	National Innovation Council
NICE	National Invention Contest and Exhibits
NICER	Niche Centers in the Region for R&D
NICP	National Information of Communications Technology
NLP	National Library of the Philippines
NNS	National Nutrition Survey
NPP	National Priority Plan/Program
NRDC	National Research and Development Conference

NSTW	National Science and Technology Week
NTC	National Telecommunications Commission
NUTRICOMNET	Nutrition Communication Network
NUTRINET	Nutrition Research Information Network
OBB	Opening Billboard
OFW	Overseas Filipino Workers
OSH	Occupational Safety and Health
OTS	Other Threatened Species
PDP	Philippine Development Plan
PJS	Philippine Journal of Science
PMD-MIS	Planning and Management Division - Management Information System
PMR	Public and Media Relations
PMS	Performance Management System
PPA	Programs, Projects, and Activities
PPE	Pivot-Perform-Excel
PR	Public Relations
PRIME-HRM	Program to Institutionalize Meritocracy and Excellence in Human Resource Management
PROMISE	Promoting Research and Outstanding Milestones in Innovation and Science for Entrepreneurship
PSTOs	Provincial Science and Technology Offices
PSYSC	Philippine Society of Youth Science Clubs

PTF	Philippine Tropical Fabrics
PTV4	People's Television Network
QMS	Quality Management System
RBRC	Regional Basic Research Caravan
RDIs	Research and Development Institutes
RDLead	R&D Leadership Program
RDP	Research & Development Personnel
RED	Reference for Emergency and Disaster
RICE	Regional Invention Contest and Exhibits
RRDIC	Regional Research Development and Innovation Committee
RSTW	Regional Science and Technology Week
RYPIC	Regional Yarn Production and Innovation Center
S&T	Science and Technology
SciCom	Science Communication
SDG	Sustainable Development Goals
SETUP	Small Enterprise Technology Upgrading Program
SILMS OPAC	SciNet Integrated Library Management System Online Public Access Catalog
SIMATAR	Strategic Intervention Material for Teaching with Augmented Reality
SLIMS	Science Library Integrated Management System
SLS	Scientific Literature Services

STARBOOKS	Science and Technology Academic and Research-Based Openly Operated KioskS
StARTT	Strategy to Accelerate and Revitalize Technology Transfer
STELLAR	S&T Experience using Leading-Edge Learning Additions and Realities
STEM	Science, Technology, Engineering, Mathematics
STI	Science, Technology and Innovation
SUCs	State University and Colleges
SWS	Social Weather Stations
S4CP	Science for Change Program
TBI	Technology Business Incubation
TBIs	Technology Business Incubators
TDD-TIPS	The Technology Diffusion Division - Technology Information and Promotion Section
TechMIS	Technology Management System
TECHNiCOM	Technology Innovation for Commercialization
TELA	Textiles Empowering Lives Anew
THB	Talakayang HeaRT Beat
TransDi	Transforming R&D Outputs into Innovations through Technopreneurship and Customer Validation
TUPV	Technological University of the Philippine Visayas
T2P	Technology to People

UP	University of the Philippines
UP-NISMED	University of the Philippines - National Institute for Science and Mathematics Education
VAW	Violence Against Women
VIP	Virology and Vaccine Institute of the Philippines
VS	Very Satisfactory
VUCA	Volatility, Uncertainty, Complexity and Ambiguity
WVIEERCD	Western Visayas Consortium for Industry, Energy, and Emerging Technology Research and Development

CHAPTER ONE

EMBRACING CHANGE

Change is the only thing constant in this world, and everyone must always be ready for it. The principle is to keep adapting because it is both a survival and a success skill. Yes, there are times one will fail, too, but the secret is to fail correctly. After great big changes, one's wings are opened. One must embrace change to keep up, move forward, and lead.

"Let's start from the very beginning, a very good place to start."

— The Sound of Music

"On March 7, 2016, a few months after my final interview with DOST, I finally received [a call] from the office of the DOST secretary to go directly to Secretary Montejo's residence. After being sworn in, in front of a wall with then President Aquino's photo and taking a few pictures, I officially became the director of DOST's Science and Technology Information Institute (STII).

The very next day, I reported to work and immediately called for a town hall meeting. I wanted to establish my role in the institute, which is that of the driver of the STII bus to bring everyone to a common destination, to ensure safety, and that all seats are taken by the right passengers, and that everyone's enjoying the ride. "

— Director Richard Burgos

In 2016, there were big changes that needed to be done for the DOST-Science and Technology Information Institute (DOST-STII) to not just meet its mandates, but to go above and beyond. With a mere PHP 60 million (around USD 1.2 million) budget, about 54 *plantilla* positions, facilities that desperately needed upgrading, plus marching orders from outgoing DOST Secretary Montejo to fix its flagship program, the DOSTv, in less than two months to make it operational in May, it was up to the new leadership to help steer the team through and navigate the changes, address the challenges, and grab opportunities that were to come.

To help with the transition, some principles had to be put in place. The first was to be very critical and ask questions. Teammates were encouraged to question every item—from the use of the whiteboard in the room to how resources are managed, from the manual distribution of weekly pay slips down to the smallest details on how the physical office looked like. The end goal was to leverage existing technologies to improve and re-design all internal processes. After all, technology is the DOST's family name.

Starting internally would help prepare for the biggest shift that was about to occur—moving from the administration of President Aquino to President Duterte's.

It was by raising questions that better solutions and changes were finally initiated to realize the goal of communicating science for the people. Some notable initiatives included a newfound practice of actively seeking and securing partnerships in the public and private sectors, creating a Corporate Identity Manual to establish branding, and securing funding for graduate studies for 16 DOST staff at the UP Los Baños College of Development Communication through the DOST Human Resource Development Program (HRDP) to further strengthen the pool of science communicators.

DIGITIZING THE AGENCY'S PRESENCE

It was crucial to the communication paradigm to engage millennials and the increasing number of tech-savvy citizens. A cursory check of the chief executives of the DOST showed that they were mostly not on Facebook in the first place! This had to change. This meant embracing the use of social media platforms favored by this new audience, starting with an internal training held for the DOST Media Core staff in 2016.

That year, while only a handful of agencies were engaging on social media, the DOST-STII began cross-posting its written materials and press releases onto its official Facebook account, leading to about 197 posts on Facebook in 2016, which reached 427,268 users, engaging 28,413 people, and garnered 1,713 likes, averaging 143 likes per month.

As the DOST decided to reframe its efforts as an intersectional endeavor, one that impacts the day-to-day life of the everyday Filipino, the direction of the DOST-STII also shifted. It began branching to other sectors apart from scientists, researchers, and patentable outputs to local policymakers, businesses, and youth groups to meet organizational mandates.

When it came to Secretary Montejo's marching orders to make DOSTv work, a bold move to exploit the power of broadcast, the strategy was to engage consultants who could give the STII team a crash course in broadcasting and friendly experts who provide services and equipment often for a song.

Mona Carina Montevirgen, Studio Director and Executive Producer at DOSTv, recalled: "Broadcast work is like eating time constraints for breakfast. From script to screen, our days were beset with meeting deadlines as every minute or second of time matters. Since we are like on-the-job trainees who must rise up to the call, we've learned how to skillfully manage our time and eventually surpassed the learning curve at the shortest possible opportunity."

She shared a funny incident during a live broadcast, when a technician fixed the lapel microphone of the host during the commercial break but unfortunately ran out of time to exit before going on air again. "What he did was get under the host's table and stayed there for a while, hoping he would not be seen on camera. Luckily, he somehow managed to endure leg cramps without complaint. Later off the air, when we were sure that he was alright, we in production just burst out laughing, finding humor in the situation but not without admiration for this technician who did much to make our broadcast flawless."

With their commitment, the team gained the trust and confidence of other parties and was granted funding or freebies like discounts on accommodations when on-location shoots. Stakeholders from the regional offices were also gracious enough to cover some expenses. Teamwork at all levels was key. Mona observed how everyone learned to adjust to each other, "helping whoever needs more time to accomplish things."

DOSTv began live streaming in May 2016, went on People's Television Network (PTV4) and Global News Network (GNN) a year later, and eventually on GMA News TV and CNN Philippines. It has since live streamed simultaneously on Facebook and YouTube every day since it began broadcasting.

SCIENCE, TECHNOLOGY, AND INNOVATION FOR ALL

Composed of dynamic and passionate individuals, the DOST-STII remains committed to the mandates of establishing a science and technology data bank and library, disseminating science and technology information, and undertaking training on science and technology information.

This is being implemented through the DOST-STII's technical divisions, such as the Information Resources and Analysis Division (IRAD) and the Communication Resources and Production Division (CRPD), with the support of the Finance and Administrative Division (FAD) and Management Information Systems and Planning Section (MISPS).

The team is fired up by this vision: to be the leading agency and the authority in Science, Technology and Innovation (STI) information geared towards building a culture of STI to accelerate the nation's socioeconomic development. And this is done by providing accurate, relevant, timely, and inclusive STI information through resource sharing and efficient delivery systems; promoting public awareness, understanding, and appreciation of STI in national development; and capacitating key stakeholders as partners and advocates in building an STI culture.

Through intensified social media posting and promotional efforts, there has even been a significant increase in article submissions for the oldest scientific peer-reviewed journal in the country, the *Philippine Journal of Science*, during the COVID-19 pandemic.

Fully embracing the changes that have come with the new administration both in government and in the DOST, the upgrades in technology, and the shifting audience landscape, the DOST-STII became the de facto agency that helped the DOST during big events, organizing 92 press conferences, 275 instances of photo coverage, and nine live streaming event services in 2016 alone. The National Science and Technology Week has since become a DOST-wide national fiesta, showcasing the latest S&T innovations and drawing in crowds every year. Additionally, the DOST-STII spearheaded the *Iba na ang Panahon*: Science for Safer Communities in 2014 and the Science Nation Tour in 2016 projects, both of which helped train local government units (LGUs) in disaster risk reduction and management.

To support the DRRM thrust of the DOST, the DOST-STII published in 2014 the Reference for Emergency and Disaster (RED) book containing guidelines to follow before and during a hazardous event.

These endeavors signaled the beginning of many strategic partnerships that would shape and bring further success to the agency's projects. With the success of the first year of change at the STII, the team was gearing up to go even farther and reach new heights in bringing science closer to the people.

Philippine Journal of Science: A History

The *Philippine Journal of Science* (PJS), the oldest peer-reviewed scientific journal in the country, celebrated its 110th anniversary in 2016, a milestone year when it started publishing four issues instead of the usual two. After more than 11 decades of being the vehicle for researchers and scientists to communicate their studies, the PJS continues to serve the science community with bravado.

Here is a transcript of an interview as told by: Caesar A. Saloma, Ph.D.: Editor-in-chief; Academician and Professor at the National Institute of Physics, University of the Philippines Diliman and Fabian M. Dayrit, Ph.D.: Member of the Board of Editors; Academician and Professor at the Department of Chemistry, Ateneo de Manila University

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COULD YOU GIVE US A BRIEF BACKGROUND ON THE PHILIPPINE JOURNAL OF SCIENCE (PJS)?

Caesar A. Saloma, Ph.D.:

The first issue appeared in 1906. That is two years earlier than the establishment of the University of the Philippines. The first editor-in-chief was American. If you look at the early articles, it is about the geography of the Philippines as an archipelagic area.

Fabian M. Dayrit, Ph.D.:

They did not really say why they established it, but I suspect they wanted to record the scientific activities of the American

scientists they brought here. And, of course, to record the science that was specific to the Philippines.

Before, it used to be quarterly, and then there was a time when it did not get that much support. Dr. Saloma came along, and he really lobbied for it. He asked for more funds from the DOST-STII and reconstituted the editorial board. He has been very successful at improving it, and recruiting more local and international reviewers. He has raised the standard level of PJS. And, of course, it is open access and downloadable.

THE AVERAGE DURATION OF THE PEER-REVIEW PROCESS HAS BEEN SIGNIFICANTLY REDUCED FROM 62.3 WEEKS IN 2015 TO 8.6 WEEKS IN 2021. HOW DID YOU MANAGE TO ACCELERATE THE PROCESS, AND WHY IS IT IMPORTANT TO DO SO?

CS: First, we required corresponding authors to list five possible reviewers to guide us due to the multidisciplinary nature of the journal. Second, we clarified the criteria for acceptance. If in the first round, two reviewers want major revisions, we return it, and we stop the review process so that the corresponding author can submit to another, more specialized journal. It is also critical that our staff understands the details of running an editorial office.

Getting a decision within two months, by international standards, is already very fast. While timeliness is key to our research

report, we do not compromise on quality. Every manuscript undergoes peer review, and there are always at least two independent reviewers in a single-blind review process. One of the joys of managing a journal is seeing the sincerity of the members of the scientific community for quality control and self-regulation. Our reviewers are volunteers. An honorarium was not sustainable [for us]. Consciously, we balance 50% foreign and 50% local reviewers because we want knowledge transfer from foreign experts to local authors while having local scientists and young researchers learn how to objectively review the work of their colleagues without getting personal.

IN THE LAST SIX YEARS, ARE THERE ANY PUBLICATIONS THAT HAVE STOOD OUT? ANY THAT MADE A SIGNIFICANT IMPACT OR THAT HAS BEEN BUILT UPON BY THE LOCAL AND INTERNATIONAL SCIENTIFIC COMMUNITY?

CS: There was research about a species [of a mouse] that survived after the eruption of Mt. Pinatubo, and it was featured in *The New York Times*. There are third parties like the National Academy of Science and Technology (NAST) who look at papers published in journals with Philippine publishers, and they decide which ones are outstanding publications. In recent years, more than 50% of the outstanding papers in different areas were published in the *Philippine Journal of Science*. But the editorial office does not promote a particular paper. We have a Facebook page and everything is projected there, and I am happy

that some articles have followers. Although we do have special issues on biodiversity and so on, that is as far as focusing on certain topics.

WHAT IS THE ROLE OF THE EDITORIAL BOARD IN SHAPING THE JOURNAL?

FD: Among the things we discuss is the budget, for example, the problem with personnel and updates with its ranking and citations. Also, how to recruit more reviewers. Since it is multidisciplinary, it is difficult to get experts in all of the different fields. Dr. Ragasa passed away, but she was very involved with how to deal with Thomson Reuters and Scopus classifications. To get better citations in the index, you have to know how things work.

CS: The decision to accept or reject a manuscript submission is the sole authority of the editor-in-chief. The editorial board meets twice a year to review our processes and performance. The critical role of the editorial board is, for example, our acceptance rate is about 65%. So, the editorial [board] can say: “What happens if we make it 80%? What happens if we lower it to 40%?” The editorial board will deliberate the implications of the changes in the requirements.

[When] there are experiments involving bioprospecting of our natural resources, genetic samples from indigenous peoples, experiments involving animals, [and the

like], one of the roles of a member of the editorial board is to determine if these are compliant with laws and regulations. In very extreme circumstances, they [also] serve as adjudicators if there are possible issues of conflict of interest and misconduct, which so far we have not had.

WHAT IS THE ROLE OF A LOCAL PUBLICATION IN COMMUNICATING SCIENCE IN THE PHILIPPINES?

FD: PJS was established and still remains to be a venue for scientific research in the Philippines. It is a repository of knowledge on research that is of interest in the Philippines. They may not all be about the Philippines, but they must have some connection or relevance to the nation.

Personally, I see it as having historical continuity. I publish work on coconut, and I can trace the history of coconut from the first article published in 1906 or so. I wrote an article in the Centennial issue tracking the articles on coconut in PJS until 2007, and you can actually see trends in the development of the coconut industry, the topics that were covered, and the frequency. You can actually read into the way certain fields developed through PJS.

WHAT FUTURE INITIATIVES DO YOU HOPE TO EXPLORE TO EXPAND THE READERSHIP AND TO ENRICH THE LOCAL SCIENTIFIC LANDSCAPE?

CS: I see the strategic role that a multidisciplinary journal like PJS will

play in the continuing development of the domestic scientific community. Particularly in the enhancement of the practice of self-regulation among the members of the community. With more scientists being trained, better quality research publications and outputs, increasing funding for research and development, as well as scholarships for our graduate students, we needed our own journal to operate and maintain.

A foundational issue with communicating science in the Philippines is our vocabulary. To make it a part of [people's] lives, we need to develop the language at the root level. We also hope that what we report will be covered by more scientific databases and search engines. We have had measurable gains in the number of technical papers, but we have to expand our community to cover all areas of science. No one lasts forever. How do we sustain the gains?

[We also ask ourselves] do we need to be international? There are downsides to that, in a sense that the operations become very big. It will not be sustainable. Right now, we do not have publication charges because it is covered by public funds. We are gaining a foothold in ASEAN countries, and that has implications in terms of sustainability and in the character of our journal.

Printed copies of the *Philippine Journal of Science*.

CHAPTER TWO

DEFYING GRAVITY

To defy gravity, one must break the most basic law of nature, the one law that anchors everything on the planet's surface. It is just like a humble paper airplane: so simple in concept and construction that young children learn to make one before they get to first grade. Yet, with a generous heave, a paper airplane can fly and defy gravity, much like today's most advanced experimental aircraft. In the case of the DOST-STII, the audacity to break free from self-imposed limitations to be able to dream BIG—and achieve BIG was needed. Together, the internal momentum needed to reach escape velocity and soar to horizons unexplored and challenges unconquered had to be generated.

Something has changed within me
Something is not the same
I'm through with playing by
The rules of someone else's game
Too late for second-guessing
Too late to go back to sleep
It's time to trust my instincts
Close my eyes and leap

It's time to try defying gravity
I think I'll try defying gravity . . .
And you won't bring me down

— Defying Gravity sung by
Idina Menzel and Kristin Chenoweth
in the musical Wicked

Change worked wonders for the DOST-STII team, producing an insatiable thirst for continuous improvement. There was a collective determination to soar and fly higher, adopting a growth mindset that would serve the group well.

And it seemed that the universe was on its side, as additional support in the form of resources to more effectively communicate science, technology, and innovation to various audiences was garnered. In 2017, the budget reached PHP 97 million (around USD 1.9 million) from the General Appropriations Act (GAA) and PHP 137 million (around USD 2.7 million) from the DOST Grants-In-Aid (GIA) Program, which was definitely greater than the previous year! The DOST-STII was also able to hire younger contractual staff, bringing the average mean age to 24 compared to 44 for permanent staff. This younger team is a refreshing

addition, especially with the agency's goal of strengthening its presence online and on social media platforms.

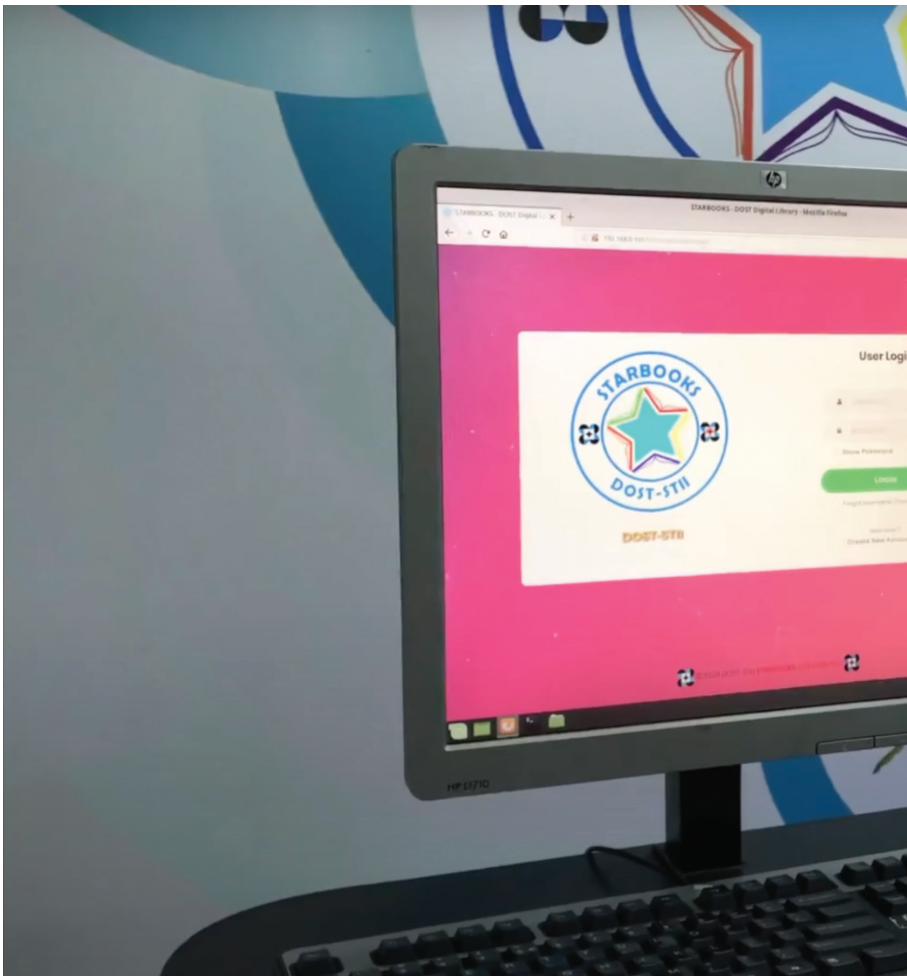
Additionally, there was an increasing push to spread the message across a wider audience. Sadly, at this time, there was no available index to determine the national level of awareness on science, technology, and innovation.

Driven by the organizational mandate to disseminate science and technology information, the team wanted to have a baseline, so a national survey was commissioned through the Social Weather Stations (SWS) in 2017. Six percent was the initial figure for the national awareness level of S&T, which was very low. For 2018, the goal was to at least double that, so proposals were sent out to chiefly grow the budget.

By that time, a total of 128 units of DOST-STII's stand-alone, onsite research kiosks called STARBOOKS (Science and Technology Academic and Research-Based Openly Operated Kiosks) were provided to selected schools in different municipalities in the region, including eight schools in Geographically Isolated and Disadvantaged and Conflict-affected Areas (GIDCA) and tribal communities. It came from a plan to provide a cozy space where library-goers can enjoy a cup of coffee while browsing through S&T content. STARBOOKS became a channel that provided relevant S&T information to thousands of students across the country. But to sustain it, stretching capacity and finding ways to augment the budget were necessary.

NATIONAL PRIORITY PLAN AND GRANTS-IN-AID

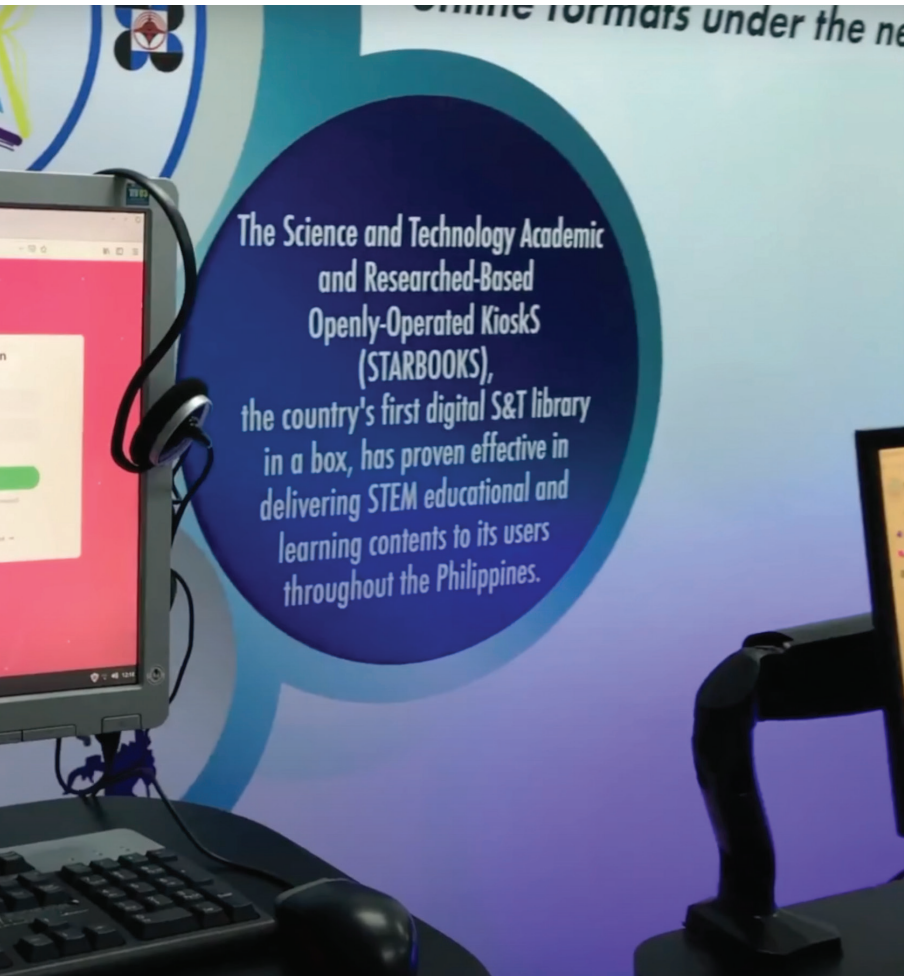
The National Economic and Development Authority (NEDA) is the agency spearheading the government's economic agenda. Annually, it releases a list of priority programs in specific areas like education, health, youth and sports development, human settlements, science and culture, and economic development. Getting into NEDA's National Priority Plan (NPP) to enhance DOST's science communication efforts was identified



Reaching central and remote areas, the digital library STARBOOKS has been part of the National Economic and Development Authority's (NEDA) National Priority Plan (NPP).

as a means to open more windows where doors for traditional sources of funds remain closed.

In 2017, NEDA recognized STARBOOKS as a National Priority Program. By this time, the innovation was already six years old and making waves across the archipelago.



From having the DOST Regional Office IX in the Zamboanga Peninsula as the first adopter when it launched in 2011, STARBOOKS is now installed in more than 6,000 sites across the country, including many public and private schools. This was achieved through the collaboration of the DOST Regional Offices with the Department of Education, Local Government Units, and other stakeholders.

The success of STARBOOKS as a knowledge product has drawn the attention of private, government, and non-government organizations as a worthy platform for their respective partnering initiatives. An example is Asia Pacific College, a private tertiary educational institution founded in 1991 as a non-profit venture between IBM Philippines and the SM Foundation. It signed a Memorandum of Agreement with STARBOOKS that would send digital copies of its applied research papers and outputs as knowledge content of the latter. This kind of content partnership would be replicated many times among academic institutions, including Silliman University in Dumaguete City, among others.

GAINING MOMENTUM

In parallel, the DOST Grants-in-Aid (DOST-GIA) funding was requested through a proposal that was eventually presented to the DOST executive committee on September 14, 2017.

By October of the same year, DOST-GIA granted PHP 70 million (around USD 1.4 million) to DOST-STII's Communicating Science for the People (CSFTP) Program. Entitled "Communicating Science for the People: Considerations Towards A Strategic Communication Plan for DOST," the proposal clearly defined six component programs that were to be implemented to boost efforts to communicate the many benefits of science, technology, and innovation.

Project 1: Leveraging the Power of Broadcast and Web Media to Promote Science for the People (DOSTv)

Its main aim was to optimize online and TV formats through the creation and completion of 40 documentaries or science features with corresponding teasers, 60 trivia, 30 recipe how-to's, and 20 other DOSTv content (news and flash reports) per year. The project also sought to equip DOSTv personnel with production and broadcast skills through training sessions and short courses, as well as equip the studio with essential broadcast and production facilities, equipment, and software.

Summary of Achievements:

This project focused on content creation with creative partner 360 Media Productions. Headed by a multi-awarded filmmaker with years of experience in both film and broadcast production, they provided on-the-job training to DOSTv staff in 2016 and have since then provided support, even as the DOSTv team started to do its own productions.

Targeting the general public, notably classes C and D, the daily broadcast production efforts of DOSTv produced more than 400 episodes from 2018 up to the 1st semester of 2019. DOSTv was also able to produce in-house segments, namely Sinesiyensya (a documentary segment that features inspiring stories of individuals or groups benefiting from the DOST interventions), Negosiyensya (a segment that showcases the success stories of MSMEs and assisted communities that adopted the technology-based livelihood programs of the DOST), Balitang RapiDOST (a flash report segment that showcases events, programs, and services of the DOST agencies and regional offices, as well as other news and updates on science and technology), and Expertalk (a segment that showcases various interviews with experts in the field of S&T), among others.

To reach the radio listeners in the country, DOSTv also partnered with Radyo Pilipinas 1 (DZRB 738AM) to air "DOSTv sa Radyo" with a total of 30 episodes aired at the end of 2019 that reached 145,000+ viewers. Online data analytics were also conducted, showing the popularity of the Expertalk episode featuring a DOST-PAGASA Weather Forecaster in 2018, and the Sinesiyensya episode featuring JYS Repair Shop in Camiguin in 2019, as well as a peak of 1.3 million minutes viewed in 2018 and 12.5 million minutes in 2019.

As for the broadcast segment on PTV4, the media monitoring of Kantar showed that the viewership of DOSTv had an upward trend from its initial broadcast in 2017 up to 2019, with 22,000 average viewers per minute.

Project 2: Content Development for the Science and Technology Academic and Research-Based Openly-Operated Kiosks (STARBOOKS)

STARBOOKS is a stand-alone information source made to reach those with limited or no access to science and technology resources.

As STARBOOKS is the DOST-STII's flagship program, the goal of this particular project was to strengthen content development by consolidating content to a common platform and updating STARBOOKS content to cater to its clients' needs.

Summary of Achievements:

An initial 1,709 materials were included in the distribution and updating of STARBOOKS installers during the STARBOOKS Deployment Officer's Workshop in April 2018, which covered a total of 966 sites. The remaining 2,577 materials were included in the distribution and updating of STARBOOKS installers during the STARBOOKS Deployment Officer's Workshop in December 2018.

In its discussions on education trends, FrontLearners Inc., an educational company and STARBOOKS partner founded by Leo and Elaine De Velez, presented its Grades 1-12 STEM learning content at the STARBOOKS Regional Cluster Conventions held in Tacloban City, Baguio City, Cagayan de Oro, and Metro Manila.

The STARBOOKS team also sailed into uncharted waters when it joined the Anvil Awards search. A prestigious competition presided over annually by the Public Relations Society of the Philippines to recognize and honor the country's most outstanding public relations programs, tools, and practitioners. In March 2017, the program bagged two Anvils: the Gold Anvil for Public Relations Program Directed at Specific Stakeholders, Students, Entrepreneurs, LGUs, Communities, and Indigenous Peoples, and the Silver Anvil for Public Relations Tools for Multimedia/Digital. Later that year, replicas of the Gold and Silver Anvil trophies were presented to DOST regional and provincial offices in recognition of the

tremendous contributions of its deployment officers. These awards served as a testament to STARBOOKS' significant contribution to promoting science, technology, and innovation, thus leveling the playing field for students, especially in far-flung areas.

Project 3: Doubling the Reach Through Information, Education, and Communication (IEC) Campaign

For this project, there were five main goals: to double the reach of existing information materials, to strengthen the presence in and relations with the media, to maximize the use of social media, to institutionalize an "information push" through the DOST branding initiatives (including the use of Poster Boy/Girl and Smarty the Mascot) and media monitoring, and to conduct legislative information campaigns.

Summary of Achievements:

The project doubled the number of photos and articles related to the Secretary of the DOST in the media, from 310 at the start of the project to 893 at the end of the project. This represents a growth of 144%. In addition, newspapers featured DOST-related initiatives at least twice a month.

The project also doubled the printing and distribution of long-running publications like the *S&T Post*, *Balitang RapiDOST* and *DOST Digest*. The *Philippine Journal of Science* grew from two to four issues a year.

Paid segments on leading broadcast slots included DZRH TeleRadyo hosted by Florante Rosales (26 episodes across two seasons), RadyoHenyo at DZRH (39 episodes of teleradyo drama with interview across three seasons), and PinoyMD over GMA7 for one season or 13 episodes.

When it came to social media, at least five posts became viral for the entire project duration (i.e., the total reach of 10,000 to 15,000 users in a month for each of the five posts), including a post about the *Philippine Journal of Science* being an open-access journal that students can use in their reports or theses.

It was under this project that the DOST sought the assistance of Dr. Dave G. Centeno in identifying possible DOST celebrity endorsers or "poster boys/girls." Dr. Centeno is from the Cesar EA Virata School of Business and UP Communication Research Society of the College of Mass Communication, both of the University of the Philippines Diliman. After conducting four Focus Group Discussions and three surveys with participants from different backgrounds in six different locations, the initiative identified Chris Tiu, former basketball star, TV host, and entrepreneur, as the DOST brand ambassador.

His ambassadorship formally commenced on July 17, 2019, during the opening of the National Science and Technology Week (NSTW) 2019, a few weeks after the CSFTP program officially ended. Despite the end of the program, the DOST-STII continued with the engagement with Chris, with lined up activities for different agencies of the DOST. When the DOST brand ambassador appeared on the iBilib show on GMA7, where he happens to be the main host, he promoted the Pack of Hope or ready-to-eat meals as emergency food during disasters using technology developed by the Industrial Technology Development Institute (ITDI) of the DOST.

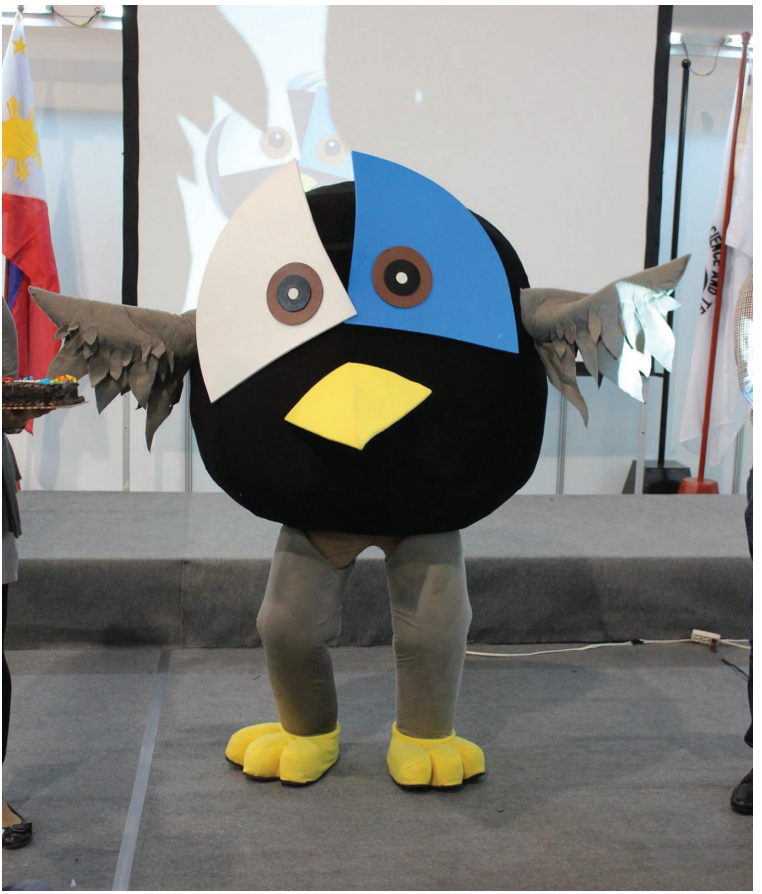
A mascot called Smarty and the Corporate Identity Manual were produced to intensify audience recall and provide branding guidelines, respectively, to unify all communication efforts in the Department.

Project 4: Enhanced S&T Experience using Leading-Edge Learning Additions and Realities (STELLAR) Including INFOSERBILIS

The project objectives centered around creating an inviting first impression by revitalizing the DOST-STII library collection and facilities, connecting the S&T library to the community, and expanding its library communication strategy and services.

Summary of Achievements:

This project was able to acquire information resource network devices, revitalize collection and digitize materials, develop the Knowledge



Smarty is the DOST's official mascot.

Management System for process streamlining, harmonize information entries and sources within the Knowledge Management System, and engage the DOST stakeholders for the continuous improvement of information delivery systems.

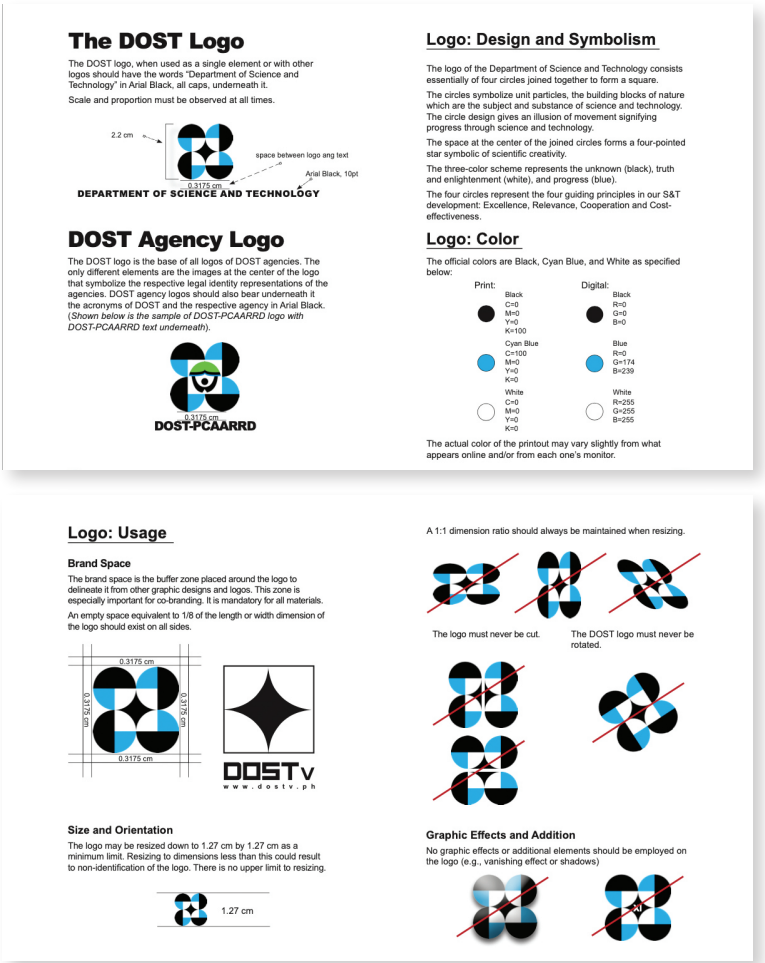
Project 5: Strengthening the Core

This project focused on capacitating S&T information officers and managers through training, seminars, and workshops. Additionally, it

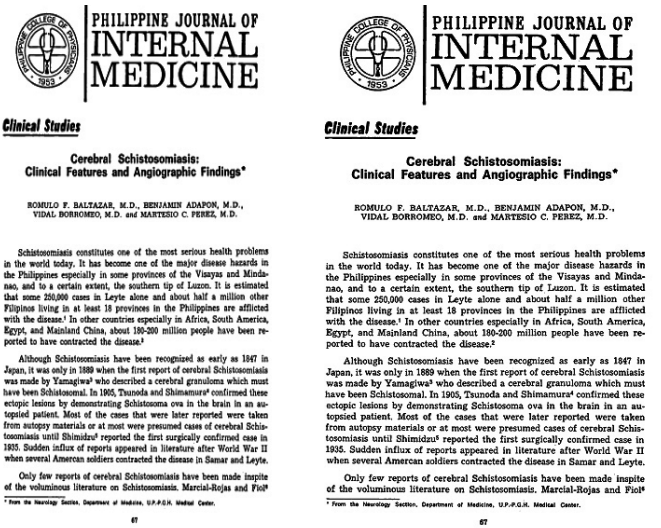
sought to conduct communication research activities about the DOST programs and projects.

Summary of Achievements:

The project led to the training of the DOST Media Core, the nationwide network of information officers in the Department's agencies, offices, and Regional Offices. "Information officers" refer to staff who do information



Pages from the DOST's official Corporate Identity Manual.



PHILIPPINE JOURNAL OF INTERNAL MEDICINE

Clinical Studies

Cerebral Schistosomiasis:
Clinical Features and Angiographic Findings*

ROMULO F. BALTAZAR, M.D., BENJAMIN ADAPON, M.D.,
VIDAL BORROMEO, M.D. and MARTESIO C. PEREZ, M.D.

Schistosomiasis constitutes one of the most serious health problems in the world today. It has become one of the major disease hazards in the Philippines especially in some provinces of the Visayas and Mindanao, and to a certain extent, the southern tip of Luzon. It is estimated that some 250,000 cases in Leyte alone and about half a million other Filipinos living in at least 18 provinces in the Philippines are afflicted with the disease.[1] In other countries especially in Africa, South America, Egypt, and Mainland China, about 180-200 million people have been reported to have contracted the disease.[2]

Although Schistosomiasis have been recognized as early as 1847 in Japan, it was only in 1889 when the first report of cerebral Schistosomiasis was made by Yamagiwa[3] who described a cerebral granuloma which must have been Schistosomal. In 1905, Tsunoda and Shimamura[4] confirmed these ectopic lesions by demonstrating Schistosoma ova in the brain in an autopsied patient. Most of the cases that were later reported were taken from autopsy materials or at most were presumed cases of cerebral Schistosomiasis until Shimidzu[5] reported the first surgically confirmed case in 1935. Sudden influx of reports appeared in literature after World War II when several American soldiers contracted the disease in Samar and Leyte.

Only few reports of cerebral Schistosomiasis have been made inspite of the voluminous literature on Schistosomiasis. Marcial-Rojas and Fiol[6]

* From the Neurology Section, Department of Medicine, U.P.-P.G.H. Medical Center.

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Through newly acquired digital scanners, many printed materials have been converted to improved, digitized versions.

work, whether as writers, artists, photographers, videographers, and others. Since most are not communication majors, a survey was first conducted to understand what learning sessions they needed. A Media Core Summit was held to convene the information officers, to whom were shared social media best practices by some agencies with successful Facebook campaigns such as the DOST-SEI, DOST-PCHRD, DOST-PCIEERD, DOST-PCAARRD and DOST Regional Offices I and X, as well as the DOST-STII.

A DOST Media Core Convention in Cebu was also held to offer the training topics that emerged from a Training Needs Assessment survey. Industry practitioners spoke on Communication Research, Social Marketing, Social Media, Photography, and Media Relations for Online, Print, and Broadcast channels.

Other training sessions offered throughout the project duration included Infographics Design, Effective Technical Writing and Editing, Media Interview Techniques, Design and Layout of Information Communication

Materials, Popular Writing, Science Journalism: News and Feature Writing, Effective Writing, Crisis Communication, and Mobile Photography.

This enabled even technical and administrative personnel to plan and produce promotional activities, annual performance reports, performance reviews, newsletters, and social media posts in their respective areas.

Project 6: DOST Bantog: Science For The People Media Awards

For this project, the DOST hoped to strengthen partnerships with the media, as well as recognize the contributions of media institutions and practitioners in the promotion of science and technology information.

Summary of Achievements:

The production of Bantog: The Science for the People Media Awards recognized the important role of media practitioners (print, radio, TV, and online) in government and private practice, who made significant contributions to the promotion of science and technology information. The Institutional Media Award was given to an institution or organization that served as a vital link between the science and technology (S&T) sectors and their clients through informative advocacy. The Outstanding S&T Journalist Award was given to an individual media practitioner who has been an ardent advocate of science and technology, whether in print, broadcast, or online. The Outstanding Regional Media Practitioner Award was given to an enthusiastic regional media personality who has shown strong support in promoting science and technology information. Finally, the Outstanding Information Officer Award was given to exemplary information officers in the DOST working in the area of communication production and dissemination.

All Bantog awardees received trophies, while the individual category winners received additional cash prizes. The Outstanding S&T Journalists for online, print, radio and TV all took home PHP 100,000 (around USD 2,000), PHP 50,000 (around USD 1,000), and PHP 25,000 (around USD 500) for the first, second, and third prizes, respectively. The sole winner of Outstanding Regional Media Practitioner received PHP 50,000

(around USD 1,000) and the Outstanding DOST Information Officers got PHP 30,000 (around USD 600), PHP 20,000 (around USD 400), and PHP 10,000 (around USD 200).

To understand the reach of the Bantog Awards, 12 news blasts were monitored in the first half and 24 news blasts in the second half. The team also monitored a hundred posts on the social media accounts of the attendees that boosted the prominence of the Award.

Before the awarding ceremony, a total PR value of PHP 1,444,359 (around USD 28,887) and a total ad value of PHP 905,347 (around USD 18,106) were generated. After the awarding ceremony, a total PR value of PHP 3,345,772 (around USD 66,915) and a total ad value of PHP 2,614,696 (around USD 52,293) were generated, helped by media rounds done by the awards team. This influenced the media and DOST Information Officers to produce even more engaging science, technology, and innovation (STI) stories. Furthermore, it established a brand of excellence in science journalism and solidified its partnership with media organizations, one of which is the National Press Club, where its members were provided training dubbed Simplifying Science Media Training.

Through strong coordination and the timely delivery of requirements, these six projects indeed led to concrete accomplishments through the years.

MULTI-CHANNEL APPROACH

Creating a basic tenet of communication theory, Marshall McLuhan once said: "the medium is the message." As such, efforts and resources have been put into strengthening broadcast and social media platforms through DOSTv, the agency's official weather and science program. By deliberately communicating the value of this program, DOSTv, like STARBOOKS, has also been included in NEDA's National Priority Programs for five years, from 2017 to 2022.

Designed to explain science to the general public, foster an S&T culture, and encourage young people to seek professions in science, technology, engineering, and mathematics (STEM), DOSTv symbolizes the new DOST administration's policy and program priorities by bolstering the country's S&T capacity in terms of infrastructure, absorptive capacity, and human resource development. Among its show segments are the flagship DOST Report, Expertalk Online, SineSiyensya, Balitang RapiDOST, and Bantay Bulkan.

Just like STARBOOKS, DOSTv also got sponsors and partners that have helped beam and stream it across the nation through terrestrial television channels like People's Television Network (PTV-4), Global News Network (GNN), GMA News TV, and CNN Philippines.

This came after daily live streaming through digital channels and social media for a year. The result is a steady increase in viewership, particularly on PTV-4 and GNN. For the former, the average viewership per minute reached 22,000 in 2019, up from 17,000 when it started airing in 2017.

Through GNN, DOSTv programs also reached about one million cable TV viewers in Metro Manila and at least 10 million subscribers through cable affiliates, free-to-air stations in the provinces, and the Global Satellite TV (GSAT) Direct-to-Home satellite TV.

DOSTv continued to produce and broadcast content even during the pandemic through its social media channels, official website, and YouTube. From October to December 2021, Siyensikat was aired on CNN Philippines in two time slots, one in the morning and one in the afternoon. Average reach was at 768,000 and 869,000, respectively, showing 296% growth over the past weekends before the program aired.

To continue producing S&T content efficiently, DOST-STII strived to partner with companies with shared advocacy of promoting a science culture in the country. Samsung Electronics Philippines Corporation and Hyundai Asia Resources Inc. gave the necessary hardware to produce the shows. The latter, in particular, donated two Grand Starex 2.5 CRDi GLS 5AT to be used during project site shoots.

DOST Secretary Fortunato T. de la Peña speaks to stakeholders at a press conference.

Within a short span of time, significant strides were taken to strengthen and grow the number of partnerships and help S&T awareness gain traction in the country, thus making our efforts to communicate science more effective and less burdensome.


Press Confere


DEPARTMENT OF SCIENCE AND TECHNOLOGY
REGION VI
REGIONAL SCIENCE AND TECHNOLOGY WEEK
Press Conference


MEDIA
CONFERENCE


CNN


NEWS
YOU CAN
TRUST

EXPANDING HORIZONS

CHAPTER THREE

EXPANDING HORIZONS

Bold new directions marked the work on science and technology (S&T) information in 2018. That year, the DOST-STII took the next step from Defying Gravity to Expanding Horizons. Over the course of the year, the men and women of the Institute actively sought out new experiences and engagements that became, in turn, challenging, inspiring, and fulfilling—launching a trajectory to hitherto unexplored frontiers in the delivery of S&T information.

> "Everybody wants to reach the peak, but there is no growth on the top of the mountain. It is in the valley that we slog through the lush grass and rich soil, learning and becoming what enables us to summit life's next peak."
>
> — Andy Andrews, The Broke Backpacker

It was Anne Row who wrote in *The Making of a Scientist* that "Nothing in science has any value to society if it is not communicated."

The jobs of scientists, therefore, do not end in laboratories, nor with fieldwork, nor with the publication of R&D results. At the end of the day, the people must be aware of them and must want to participate in the S&T enterprise to benefit from them. This is where science communication plays a vital role, and this is where an S&T information organization becomes crucially important.

It was 2018 when solidifying partnership initiatives started to grow S&T information distribution via various media channels. Even student communities and spaces that are part of Filipino culture were tapped. Having more people on board and in line with the mission allows the generation of additional resources to boost existing programs further. This can also enhance the media footprint and broaden the scope for a stronger support ecosystem.

REACHING MORE WITH PARTNERS

So, in line with this new goal, the DOST-STII and Enchanted Kingdom, Inc. signed a Memorandum of Understanding for the installation of STARBOOKS in the theme park. Enchanted Kingdom was launched in 1995 as the Philippines' first and only world-class theme park. Years later, it looked towards expanding into new ventures such as edutainment—

entertainment with an educational aspect. As a favorite destination among young people, this initiative would make a large impact: the theme park can considerably contribute to the future of the country's educational backbone by encouraging involvement in relevant endeavors. According to the agreement, two STARBOOKS servers will be installed and made available to park visitors. One kiosk was installed at the Rialto Theatre Lobby, while the other was at the Agila, the EKsperience Main Lobby.

In exchange, Enchanted Kingdom was to provide the DOST-STII with 15 Regular Day Pass tickets per month, valid from June 2017 to June 2018. These tickets were to be utilized for promotional purposes, in addition to the promotional banners displayed along the Alabang-Pasay Road, in Enchanted Kingdom, and at the DOST Offices and Regional Offices.

Collaboration efforts, however, did not end there. In January 2019, the DOST-STII signed a Memorandum of Understanding with the Archipelago Philippine Ferries Corporation, operator of FASTCAT inter-island sea vessels. The signing represents a commitment to support science, technology, and innovation, as well as to foster a science culture in the country through constructive collaboration and cooperation in leveraging partner activities for inclusive growth and national socioeconomic development.

For FASTCAT, the thinking was: long transit times mark RORO trips—so named for how cars roll on and roll off a seacraft—which is due to the country's archipelagic configuration. FASTCAT was already looking to partner with media houses to provide entertainment and informative content to passengers, so they were convinced to show current S&T content on board.

Later in the same year, a partnership with Digital Out-of-Home Philippines (DOOH) was sealed. For almost three decades since its formation in the 1980s, the company has been serving marketers and clients with the same passion. Their goal was to build a full-service Out-of-Home Media company with unwavering ethical standards. DOOH PH has since developed from its humble beginnings to become one of the

"Developing relationships, both existing or new, is vital. For example, I used to work for Enchanted Kingdom (EK) as Assistant Vice President for Marketing and Head of Guest Relations, so I reached out to them to foster Edutainment—a science behind the rides. Anyone can experience science when they go to EK.

Meanwhile, FELTA Multimedia Inc. is one of the offices that we cold-called. I did not know them, and they did not know us. But the President and Chief Executive Officer, Mylene R. Abiva, is also a go-getter. She is a tremendous woman. And she has been helping the Philippines send a National Team to compete in international robotics competitions. We read about her since we monitor the news. So we just set an appointment and went to her office. 'Hey, would you like to donate? If you would like to donate, we will appreciate it.' After that meeting, right there and then, she signed the document to donate two laptops to our STII library, with integrated probes for measuring temperature, for measuring pH level, and other applications that are very useful for scientific experiments. This is because FELTA is into educational multimedia technology. They are the country representative of LEGO education. This is the kind of partner we want to have."

— Director Richard P. Burgos

country's leading billboard companies, servicing the advertising needs of a number of large clients.

In 2019, DOOH provided strategic and prime locations of LED and static billboards for the ad campaigns of the DOSTv Telemagazine show, "Siyensikat: Pinoy Popular Science Para sa Lahat," and for the National Science and Technology Week 2019. In 2021, they continued the partnership by promoting DOSTv's operation and broadcast.

Furthermore, with this partnership, the power of non-traditional media to promote the different knowledge products and services, as well as events of the DOST was harnessed. Paid for by the DOST, advertisements were put along both the northbound and southbound stations of EDSA-Boni Avenue, EDSA-Magallanes, the North and South Luzon Expressways, and C5 road as part of the agreements reached. DOOH extended the engagement for free.

WORKING WITH INTERNAL PARTNERS

It is important to understand that the different agencies of the DOST work together in an ecosystem, helping raise awareness for science, technology, and innovation (STI) through their own unique communication initiatives.

One such project was the Symposium-Workshop on Developing S&T Innovation Hubs and Clusters in Mindanao. It was launched by the National Academy of Science and Technology (NAST) in collaboration with the DOST Region X from May 22 to 23, 2017, at the N Hotel in Cagayan De Oro City.

The two-day event was the first in a series of activities organized by the DOST-funded NAST project, "Supporting Partnership Development in the S&T Innovation Ecosystem." The two-day symposium, which drew over 120 participants from various sectors such as industry, academia, civil society, government, and non-government organizations, aimed to investigate how three STI hubs and clusters, both physical and virtual, can be developed to correspond to Mindanao's three development corridors. The STI hubs are intended to create an innovation ecosystem that encourages creativity and collaboration among various stakeholders to translate ideas into action.

First drafts of plans for the establishment of STI hubs and clusters throughout Mindanao's development corridors were among the event's outcomes. In cooperation with relevant stakeholders in the Mindanao development corridors, the concepts were further developed and modified.

Another initiative is the Innovation Challenge or iChallenge, which is a way of identifying areas where innovation can address development gaps and constraints. A reverse pitching platform is where stakeholders can bring out real-life problems that need innovative and technological solutions from potential partners or solutions providers. The iChallenge was composed of three thematic areas: Mass Transport, Productive Farms, and Clean Environment.

To further promote STI, the DOST also had a Regional Pitching Competition. Students interested in sustainable digital solutions—tackling SMART CITIES to improve people's lives across generations—were invited to participate.

The pitching competition serves as a forum to present startup concepts to investors, mentors, and communities, highlighting the

region's advancements in S&T. The event is also an opportunity to network, exchange ideas, and investigate prospects in technological commercialization and collaboration.

With the topic "Innovations for Sustainable Development of Smart Cities," this competition was hosted by the DOST in collaboration with Batangas State University.

On the other hand, through the Innovation Lounge or iLounge, students, professionals, and business leaders receive free updates on technology and breakthroughs from Filipino scientists and young inventors, thereby serving as another platform to propagate STI information.

The latest innovations developed by Filipino scientists are showcased, as well as the programs and services provided by DOST-funded Technology Business Incubation (TBI) programs. It provides a platform for these TBIs to discuss how science, technology, and innovations can contribute to community improvement through startup projects from young innovators.

The iLounge is open to students, entrepreneurs, young professionals, and everyone else interested in learning about cutting-edge ideas that can benefit the country today.

The iLounge is a component of DOST Region X's 2019 Regional Science and Technology Week (RSTW) celebration. In addition, DOST's contribution to the United Nations' Sustainable Development Goals (SDG) was also highlighted at that year's RSTW.

Over in Negros Occidental, the Western Visayas Consortium for Industry, Energy, and Emerging Technology Research and Development, or WVCIEERD, hosted the first-ever Industry, Energy, and Emerging Technology (IEET) Research Conference in November 2019. The IEET conference brought together student and faculty researchers, inventors, and innovators from Western Visayas institutions working in the industry, energy, and new technology sectors. The WVCIEERD, which DOST Region VI leads in collaboration with the Technological University of the

Philippines-Visayas (TUPV) and Carlos Hilado Memorial State College (CHMSC), intends to present challenges for the consortium's members to improve their R&D skills, dissemination, usage, and collaborations.

Elsewhere in Western Visayas, the first-ever Iloilo Innovation Expo was held in 2019. The week-long event showcased innovations in agri-fisheries, business, government, tourism, education, and information and communications technology (ICT). The exposition served as another medium to promote STI in the regions.

"[It is] a big, big event for Iloilo," said Joeven Tansi, executive director of the Iloilo Federation of Information Technology (I-FIT). Hosting the event was important to the city, which is preparing to become one of the country's Smart Cities, like Metro Manila and Metro Cebu, among others.

Held from October 21 to 25, the first two days featured the S&T exhibits of the DOST. The third day then gave the spotlight on the startup community, followed by the launch of the National Information and Communications Technology (NICP-ICT) Summit during the last two days of the expo.

Throughout these various events and dialogues, the DOST-STII supported the agencies through audiovisual coverage and media releases, including regional S&T weeks, NICE (National Invention Contest and Exhibits) and RICE (Regional Invention Contest and Exhibits), long-running events of the DOST that seek to promote local inventions. Here, connections are made between inventors, partners, and stakeholders.

One notable personality featured was Dr. Corazon P. Macachor, who retired from teaching food technology at the Cebu Technological University (CTU) in October 2018 and decided to dedicate more energy to her business developing utility models for coconut water-infused products. "For the past three years, I have been working with the DOST to implement my research into manufacturing processes and empower Cebuano workers. The coconut water I was working with is from matured cultivar and is usually discarded by farmers in the manufacturing of virgin

coconut oil. This sets it apart from commercially produced coconut water for direct consumption." She recalled how she first presented her manuscript for coconut-water-infused fish products during the National Science and Technology Week in 2018. "I was able to connect with potential resellers from all over the country, with some organizations even offering to produce and resell the product outside of the Visayas."

Meanwhile, Dr. Marjorie E. Española, Research Director at Palawan State University (PSU), recalled her experience during the DOST Regional Technology Week in 2019, where problems in the development and production of cashew, a well-loved *pasalubong* from Palawan were discussed. "That was where we met Lennie Nicanor, owner of Chonsberry Pasalubong. Mrs. Nicanor asked if we could provide help as the machines used for cashew nut processing were expensive. Fortunately, we were able to tap Roberto Cabildo and Arland Belen, graduate students from PSU-Cuyo, who were doing their Master's thesis on cashew splitters were able to assist. At the time, they were doing their Master's thesis on cashew splitters. However, using the traditional models is dangerous and time-consuming, so PSU motivated these students to develop a prototype that can be used by MSMEs." This project was first internally funded by the University with a budget of PHP 200,000 (around USD 4,000), then the researchers joined a call for papers for the DOST's Collaborative Research and Development to Leverage Philippine Economy (CRADLE) Program, where the grant is much larger.

WORKING WITH PR

Apart from the different DOST agencies' deep initiatives deployed and sustained across the regions, the DOST works hard to maintain relationships with media and public relations professionals to seek and develop ways to spread science communication, distilling technical information into understandable messages and stories that will capture the hearts and minds of the people.

On April 7, 2021, members and friends of the Public Relations Society of the Philippines met online to discuss the importance of

science communication and consider how PR professionals and science communicators can work together to contribute effectively to society in the face of the global pandemic. "DOWN TO A SCIENCE: Science Communication in the Age of COVID-19" was the topic of the first general membership meeting (GMM) for 2021, where the DOST Secretary was the keynote speaker.

Emphasizing how the DOST's numerous projects and innovations should be effectively communicated so that Filipinos can participate and profit from them, the meeting agenda cited the STARBOOKS project, which aims to provide students with access to learning and resource materials despite today's quarantine restrictions, as well as the Filipino Patriot Scholars Project of the DOST-SEI, a values formation program, which holistically trains future innovators and encourages them to develop a deep concern for their communities and the country.

United Kingdom-based IPRA, the International Public Relations Association, is the leading global network for PR professionals in their personal capacity. IPRA aims to advance trusted communication and the ethical practice of public relations through networking, a code of conduct, and intellectual leadership of the profession. In the Philippines, it is a small "gang" of senior practitioners where membership is by invitation, and members do PR for the PR profession through a weekly column in a national broadsheet, book publications, and seminars and workshops for students and PR professionals. During the pandemic, it organized webinars through its CommuniTalks series to continue to engage, motivate and challenge practitioners and aspirants to champion ethical communication.

Last but not the least, the Asian Media Information and Communication Centre (AMIC), which is a non-governmental, multinational organization that serves as a regional research hub for media and communication concerns, became a partner. This center disseminates knowledge as a resource through different capacity-building training programs, workshops, and conferences.

ipra philippines

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COMMUNICATION TRENDS IN 2021 AND BEYOND

IPRA PHILIPPINES COMMUNITALKS 1

PANEL SPEAKERS

RICHARD POMAR BURGOS
DIRECTOR, SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE, DEPARTMENT OF SCIENCE AND TECHNOLOGY
LESSONS LEARNED FROM A GOVERNMENT AGENCY'S POINT OF VIEW

RITZI VILLARICO-RONQUILLO
APR • IABC FELLOW • CONSULTANT AND COACH, BUSINESS COMMUNICATION AND STRATEGIC PUBLIC RELATIONS
COMMUNICATION TRANSFORMED: YOUR NICHE IN THE MULTI-CHANNEL WORLD

JOY LUMAWIG-BUENSALIDO
PRESIDENT AND CEO, BUENSALIDO PR AND COMMUNICATIONS
HOW OUR PR AGENCY ADAPTED TO THE PANDEMIC

ABIGAIL HO-TORRES
ASSISTANT VICE PRESIDENT-HEAD, ADVOCACY AND MARKETING, MAYNILAD
SUSTAINABLE CSR: GOING BEYOND PHILANTHROPY

MAIN SPEAKER

PHILIPPE BORREMANS
PRESIDENT, IPRA
EMERGENCY RISK COMMUNICATION CONSULTANT, CERTIFIED TRAINER
Communication Trends in 2021

IPRA, the International Public Relations Association, is the leading global network for PR professionals in their personal capacity. IPRA aims to

"Public relations is part of our strategy to become more visible. AMIC, or the Asian Media Information and Communication Centre, conducted a webinar where I was a moderator. IPRA or the International Public Relations Association, where I am an active member and past national president, also organized relevant webinars."

— Director Richard P. Burgos

AMIC's core strengths include its active involvement in working with the industry to facilitate specific high-profile industry events, in addition to having large development partners and good academic qualifications.

These gatherings are purposefully designed to bring together industry development partners, non-governmental organizations, and individual stakeholders to discuss perspectives, challenges, and best practices.

AMIC has successfully lowered barriers by facilitating these events and has been crucial in promoting knowledge sharing, cooperation, and training to those who need it most.

Reaching broader audiences remains a concern for the local scientific community, despite science communication (SciCom) being present even in the pre-colonial era. The history of SciCom in the country was traced from pre-Spanish times up to the modern period in the Australian National University's publication, "Communicating Science: A Global Perspective." The book chapter, which forever etched the DOST's SciCom products and services in the country's own SciCom history and status, was authored by three practitioners from the academe and industry sectors. They are Assistant Professor Garry Jay S. Montemayor from the University of the Philippines Los Baños; Dr. Mariechel J. Navarro, former director of the Global Knowledge Center on Crop Biotechnology; and Kamila Isabelle A. Navarro, a graduate of Master of Science Communication at the Australian National University.

A prior SWS survey revealed that only 6% of Filipinos read science news and that scientists spend only 10% of their time connecting with the public. Journalists have often experienced difficulty reporting on the sector due to the extremely technical nature of the subjects. Therefore, the DOST attempts to close this gap by utilizing various media channels, from social media to the scientists themselves.

To inform the public about the strides made in various fields of innovation, scientists must be willing to speak and engage with the people. To prepare them for this, science communication should be elevated from a "soft talent" to a "core skill" in the field.

It is through meaningful relationships and directly engaging with each other's ideas that a win-win situation is attained.

Science With Conscience

An excerpt from Secretary Fortunato T. de la Peña's speech at the General Membership Meeting of the Public Relations Society of the Philippines, April 7, 2021.

The emerging communications practice of risk communications that is trying desperately to respond to the raging pandemic and crisis is, for me, a good reason to address you today and also to learn from what you, who are in the field, have to say.

Corporate communicators used to fear that one reputational crisis could bring stocks tumbling down. Today, the risks are amplified many times over and coming from practically everywhere: customers, supply chains, government regulators, creditors, etc. It is too early to say who will be left standing, reputation intact when the dust finally settles.

And yet I see hope in the enormous sense of responsibility exhibited by communicators and PR professionals today as they bend over backwards to assist their own people and communities, and stakeholders who are affected——or potentially affected——with disease and health risks. Many of you have had to work long hours and ensure that every single word, image, or framing we use can have a maximum beneficial impact on the people and the common good.

If there is one area where the DOST and the PRSP can work well together, then that area must be innovation. The Department of Science and Technology shares this

passion and commitment with you because innovation is, in fact, at the heart and soul of the department.

Our councils, agencies, and regional offices across the country are working closely with scientists, researchers, engineers, inventors, and innovators to push the innovation agenda so that we can develop products and services that will benefit our people.

As we pursue our mandate using the power of science, technology, and innovation, our values——shaped by our faith and religion——inspire us to develop solutions for pressing societal concerns, true to form with our slogan “Science for the People” and that, for us, also means “science with a conscience.”

It is our mission to provide and create enabling opportunities for others through innovation opportunities that will allow them to improve their lives towards inclusive growth.

With this mission in mind, the DOST has been delivering key strategic initiatives that aim to uplift the state of our country that could be felt by ordinary Filipinos.

I have been in the business of promoting science and technology in the country long enough to have witnessed how some of our scientists are becoming better communicators. They come because of the science, they are enthralled with the laboratories,

but they stay for the stories, especially the stories of positive change in people's lives because of their science and technology.

There is currently an expanding body of literature on the science of science communication, and yet we must still rely on the art of communication, and of storytelling, to reach a non-specialist audience with stories of scientific research.

My challenge for communicators and public relations professionals is manifold:

1. Open your network of experts to work with us and let us learn from each other.

2. Support our projects in the 2021 National Priority Programs.

3. Help us fight false or fake news in all forms.

4. Teach us the art of communicating our science and technology.

Help us prepare our people for the world of the fourth industrial revolution, for jobs that do not yet exist, and to find solutions not yet dreamed of.

Let us proactively pursue the promotion of science, technology, and innovation on a higher plane. But more importantly, let us look beyond today's benefits for a better future of the generations to come, because "**science is for the people.**"

Ating yakapin ang responsableng inobasyon na ang tanging hangad ay ang ikabubuti ng lahat para sa ikauunlad ng ating bansa. [Let us embrace the responsibility of innovation, where our only desire is to do good for our country's betterment.]

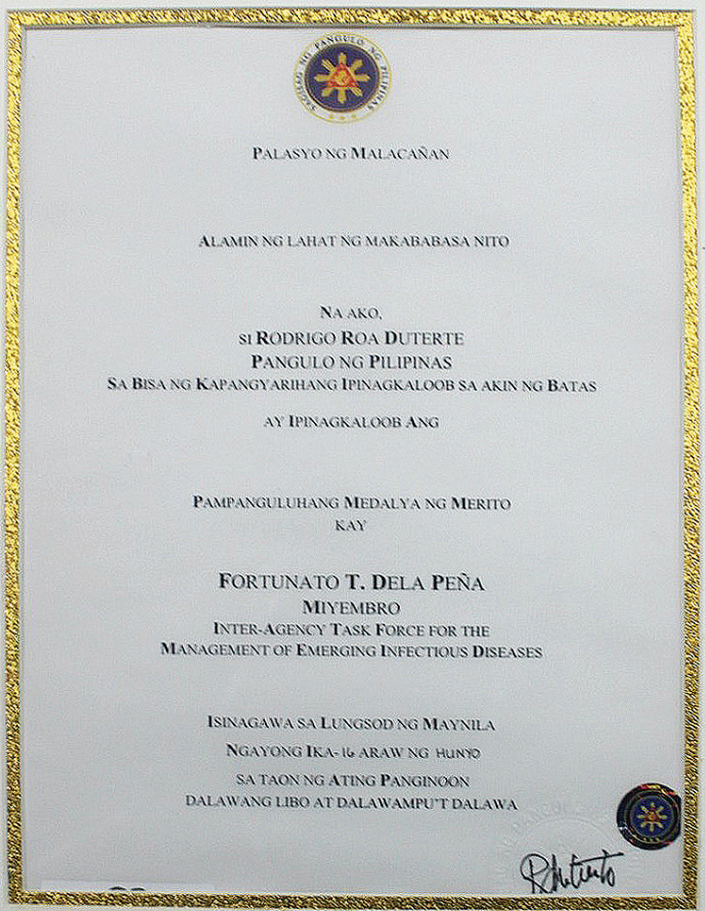
CHAPTER FOUR

WINNING AS ONE

Like puzzle pieces, the mandated units of the DOST-STII work together as one to achieve goals and deliver the agency's mission to promote a culture of science, technology, and innovation (STI) to contribute to the nation's socioeconomic development.

In a span of four years, the DOST-STII has metamorphosed from an agency that embraced change to unleash its full potential to an organization that aimed higher to reach its goals by "defying gravity" through overcoming limitations. The Institute further transformed to expand its horizons and explore more possibilities to deliver its vision, mission, and mandates to become an organization that gives value to collaboration and today to winning as one organization to bring #ScienceForThePeople.

DOST Secretary Fortunato T. de la Peña receives the Presidential Medal of Merit for being a member of the COVID-19 Inter-Agency Task Force for the Management of Emerging Infectious Diseases.



PALASYO NG MALACAÑAN

ALAMIN NG LAHAT NG MAKABABASA NITO

NA AKO,
SI RODRIGO ROA DUTERTE
PANGULO NG PILIPINAS
SA BISA NG KAPANGYARIHANG IPINAGKALOOB SA AKIN NG BATAS

AY IPINAGKALOOB ANG

PAMPANGULUHANG MEDALYA NG MERITO
KAY

FORTUNATO T. DELA PEÑA
MIYEMBRO
INTER-AGENCY TASK FORCE FOR THE
MANAGEMENT OF EMERGING INFECTIOUS DISEASES

ISINAGAWA SA LUNGSOD NG MAYNILA
NGAYONG IKA-16 ARAW NG HUNYO
SA TAON NG ATING PANGINOON
DALAWANG LIBO AT DALAWAMPU'T DALAWA

When the pandemic hit, the importance of VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) leadership came to the fore. The DOST-STII's regular operations were hit, but the institute acted quickly to identify which activities needed to transform.

The first to be disrupted was the production and distribution of print media.

The DOST-STII had previously published several printed materials like newsletters, the *DOST Digest* and *Balitang RapiDOST*, the quarterly magazine called *S&T Post,* and the *Philippine Journal of Science*. These go through the traditional process of publication, which involves writing the articles, editing, layouting, and then printing through a printing press. However, many presses closed temporarily at the very start of the lockdowns since their staff could not come to work.

To adapt, the *S&T Post* was digitized and uploaded to the DOST website and social media pages. Monthly newsletters like the *DOST Digest* and *Balitang RapiDOST* had to bid goodbye to their print versions and were emailed to partners instead, using Mailchimp. In migrating these monthly newsletters to the digital world, they reached a lot more readers here and abroad. However, some publications continued to be printed to reach places where there is no Internet through distribution by the DOST's partners and Regional Offices. These also serve as means of verification for fulfilling the mandates for Commission of Audit purposes.

When it came to the events and seminars of the various agencies of the DOST, these had to be postponed at first to adhere to social distancing guidelines.

Enter the webinar: an online event hosted by an organization and broadcast to a select group of individuals via the Internet. In this case, the various agencies of the DOST came to the DOST-STII for assistance on how to produce a web conference or a virtual press conference. This is because DOST-STII knew how to get these things done.

Having produced live streams on Facebook, Zoom, and other platforms, the in-house team and producers knew how to make a Zoom meeting look like a broadcast performance, with proper opening and closing sequences of graphics (known in the industry as OBB or opening billboard and CBB or closing billboard) and seamless shifts from presenter to slide to commentaries to Q&A. DOST-STII had the necessary equipment and human resource for event coverage, with access to creatives such as photographers, directors, videographers, and scriptwriters.

ACTING FAST

One of the first to feel the impact of the lockdown restrictions was the DOSTv programming. Among the shows whose broadcast had to be halted due to the pandemic were DOSTv: Science For The People, DOSTv sa Radyo, and "Siyensikat: Pinoy Popular Science Para sa Lahat," which aired over GMA News TV.

DOSTv had to pivot quickly, and regular programs previously aired via live stream in 2016 were continued by the DOSTv Team by coordinating pre-production, production, and post-production, together with creative suppliers, top management, other agencies and Regional Offices of the DOST and external partners. Adapting to change became imperative, and suspending broadcast production was never an option.

Lotuslei Dimagiba, the program manager then, recalled the first month of the lockdown. "When the implementation of the community quarantine was announced, the DOSTv team already anticipated that the TV airing of programs would be halted. With that, the team started conducting conference calls using Facebook Messenger and planning the pivot to the online platform."

Three days after the lockdown, on March 18, 2020, to be exact, DOSTv: The Weekend Wrap Up was conceptualized. Editors started creating materials like title cards and logos, while a writer collated news headlines and other information. Within seven days, the first Weekend Wrap Up was aired as a report on DOST activities during the week.

Unlike the usual magazine format of DOSTv, where host Gel Miranda did face-to-face interviews, immersed in the community, and reported on the ground, the Weekend Wrap Up was a news-type program that edited available footage to deal with production constraints. After six episodes, it evolved and became the DOST Report, anchored by the DOST Secretary himself.

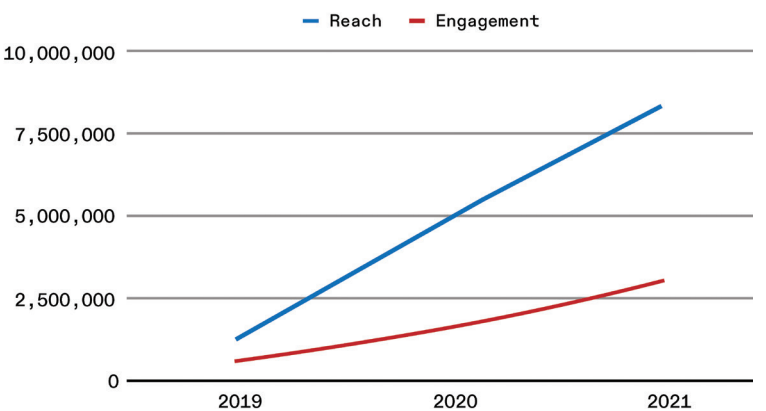
Directed by Resty Balila, who used to be the segment producer of DOST Report then and later became the program manager of DOSTv, and Henry Burgos, a film director and creative supplier for Siyensikat, DOST Report has three parts:

The first one is the KKKK Report, which aggregates reports from all the regional offices and the DOST attached agencies.

The second part is the interview portion with guests who discuss the theme or highlight of the month.

The third part covers questions by the media. As such, the DOST Report became a reliable source for press people covering the science, technology,

REACH AND ENGAGEMENT OF DOSTv FROM 2019 TO 2021



LIVE STREAMING

delivering a video of a live event to viewers using a camera, microphone, lighting, a stable internet connection, and software.

and innovation beat and relayed timely information on their channels throughout the pandemic.

On set for Siyensikat in 2019, only the spiels for two to three episodes per scheduled shoot date could be done. But by 2021, the shoot for six to eight-episode spiels could already be done, with fewer reruns as well.

And one has to just look at the reception: the reach of DOSTv has risen steadily from 1,196,246 viewers in 2019 to 8,406,055 viewers in 2021, a 603% increase. There were also five times as many engagements—whether likes, shares, or comments and the number of minutes they viewed the content also increased by 646,367 minutes.

According to the analytics, most DOSTv viewers are 24 to 35 years old, both men and women, with most Philippine-based viewers coming from Quezon City, Manila, Taguig, Cebu City, and Davao City. Meanwhile, the top five countries where there are viewers are the Philippines, Saudi Arabia, the United States, United Arab Emirates, and Canada.

Of course, the best was done to get this content in front of as many eyeballs as possible.

In 2020, the DOST-STII signed an agreement with digital marketing firm TRipples, a pioneer in user-acquisition technology, to provide various services to help promote projects such as DOSTv, as well as STARBOOKS. They do this by harnessing social media channels and supervising digital marketing via a Cost per Click (CPC) campaign to drive web traffic to the programs and posts.

The Weekend Wrap Up became the DOST Report, which first aired on May 1, 2020, and was hosted by the Secretary himself.

"When we started the DOST Report, Secretary de la Peña was just following the script we provided. But now, he's very good at doing adlibs in the middle of the interview. He will just take a glance at the script, then he will deliver it in his own words with additional information. Before, he let us oversee everything from selecting topics to picking guests. But later, he became more hands-on. There are many times that he would suggest the theme of the month and even pick the guests he wants to interview. Before, he did not want to use teleprompters. He preferred using printed papers to read his script, but later, the bigger the teleprompter, the better. The best part is that DOST Report has a total of 108 episodes as of writing, and he never missed a single recording or taping. He would make time, even late at night (around 10 PM), just to finish the recording of the episode. One time, the DOST-STII celebrated its 35th anniversary, and the celebration ended at around 8 to 9 PM, but the Secretary stayed at the venue to record for DOST Report. When

he is in other regions conducting site visits, he will dedicate an hour in his itinerary to record during lunchtime or even late at night after all his engagements. Even if he gets sleepy while recording, he still finishes it and makes sure that he delivers everything written in the script. In his own words, delivering Science, Technology, and Innovation news and updates to the people has become his advocacy. ”

— Resty Balila,
DOST Report segment producer

To spread content through more channels, partnerships were also made with the Carl Balita Reality Channel TV (CBCR.tv), a reality-based social media platform that covers a wide range of themes. Dubbed as The Virtual Space of Tomorrow Today, CBRC.tv offered to simulcast the Expertalk Online episodes produced by DOSTv. There was also a virtual launch of DOST STARBOOKS from the Carl Balita Learning Center (CBLC) via Zoom on June 22, 2020, attended by more than 647 CBLC clients. STARBOOKS units were also installed in 120 physical CBLCs across the country.

REACHING STUDENTS THROUGH ONLINE PLATFORMS

For all the good it serves, social media has allowed anyone to become an “expert” on anything, including scientific matters. Never have the dangers of this been more evident than in the COVID-19 pandemic, where “fake news” proliferated.

However, officials and faculty from the Philippine Science High School (PSHS) noticed the shift, too, and acknowledged the positive side of the online platform, and launched a program for Grade 10 students called

PISAYCOM to help prepare them for the ongoing battle for evidence-based reporting.

Rommell Oba, a senior science research specialist in the Research, Policy, and Academics Division under PSHS's Office of the Executive Director, shared, "It was recognized that a quick digital shift is happening with the occurrence of lockdowns, and students are now heavily reliant on the Internet as their source and mode of information. And with the Internet, fake news is quite rampant—not only about COVID-19."

PISAYCOM is the school's first structured approach to introducing science communication to its students. Before the program, there had been similar but smaller efforts. Science Fairs would always include a day dubbed the Community Fair, where students were encouraged to make lay-friendly presentations. Compared to these, PISAYCOM is more exhaustive. The certificate course covers science writing, visual design, and video presentation taught through pre-recorded videos featuring professional communicators in science and beyond, as well as supplementary resource websites and podcasts. Students' newfound skills are also tested through writing essays, designing visual output, and creating presentations from data. To drive relevance and social awareness, all of the materials focused on vaccines and were evaluated by their peers. Meanwhile, online forums gave the participating students the platform to share striking thoughts and ideas and receive feedback and encouragement from the course administrator. To complete their training, they also had to answer a post-test and write a reflection paper that could help the organizers improve future iterations.

Rommell reveals that the response to the experience was generally positive, with three key takeaways for the participants: (1) leveling up their creative skills, (2) gaining new knowledge through scientific content used, specifically the vaccines, and (3) acquiring interpersonal abilities to better understand audiences.

In conjunction with the course and in partnership with the Department of Education (DepEd), PSHS invited private and public schools around the country to participate in the 2021 PisayCom: National Science

Communication Competition. Open to Grades 6, 10, to 12, there were three contest branches: Science Feature Writing, Science for Visual Designing, and Science for Short Video. Winners took home cash prizes, certificates, and other tokens.

PSHS plans PISAYCOM activities to be relaunched in 2-year cycles. The first year will focus on capacity-building, while competitions will be held in the next year. Outside the course and competition, the school held separate webinars and in-depth workshops on visual design and science writing, Science, Technology, Engineering, and Mathematics (STEM) career talks, and a quiz bee for the National Science and Technology Week.

RAISING THE BANNER FOR PISAY AND EFFECTIVE COMMUNICATION

The talents of Pisay students are not confined to their dear campus. Outgoing senior Anne Maricar Maralit recounts her team's victory in Written Examination and Video Presentation during the Ateneo Chemistry Olympiad (AChO) 2021.

The weeklong event coincided with the vaccination rollout in the Philippines. When Anne's team learned they were assigned to the Health and Medicine category, they knew their output had to be about mRNA vaccines. The competition, which was held digitally, gave them five days to put together a 6-minute video.

On their approach, Anne shared that they needed to use simple vocabulary aided by graphics to explain the science behind mRNA vaccines. While the science community had been working on this type for decades, it was COVID-19 that ushered its eventual use for humankind's benefit. The team deemed that the public needed to understand how it worked and whether it was safe to put in human bodies.

A common challenge to digital life presented itself near the finish line. Anne shares, "On the day of the deadline, my internet connection was erratic. I was not sure if I would be able to upload the video due to my

limited bandwidth. Nevertheless, we were able to finish the video and submit it on time." She credits infographic projects in school as a relevant practice that led them to create concise yet comprehensible content.

It all goes back to advocacy. On the importance of science communication, Anne offers one word: inclusivity. She explains that while it may be innate for scientists to question things and pick apart complex theories, everyone else—even as their safety and survival depend on it—may not have the patience or know-how to do so. "I really enjoyed editing the video because I did not do it to win the competition. I did it to share what we know, so others could make informed decisions," she shares.

ONLINE LIBRARIES INSPIRE RESEARCH

To continuously provide information on science to the DOST's various stakeholders, clients, and partners, the agency chaired the Philippine eLib Project. This is one of the first eleven e-government-funded projects that was approved in mid-2003. It was officially launched when the heads of the participating agencies, namely, the DOST, National Library of the Philippines (NLP), University of the Philippines System (UP), Commission on Higher Education (CHED), and Department of Agriculture (DA) convened and signed the Memorandum of Agreement (MOA) on February 4, 2004.

A decade later, the Philippine eLib Project has been renamed Integrated Philippine eLib (iPeL) Project to reflect its new thrusts to expand its products and services to more academic and research institutions that have manifested their interest in joining and availing of these services. The iPeL Project was funded by the Department of Information and Communication Technology (DICT) under the Medium-Term Information and Communications Technology Harmonized Initiatives-Higher Education Cluster (MITHI-HEC) program.

The iPel provides sustained and continuous library and information services not only to academic and public libraries but also to school libraries, special libraries, and other government institutions for the

optimum use of its resources. It also promotes and thereby accelerates the exchange of knowledge resources among various sectors of society, including regional and international academics, scholars, and researchers.

To sustain it, the DOST continues to provide content on Science, Technology, and Innovation Information. It also facilitates access to these resources, particularly for SUCs and the Filipino citizenry in general, as well as establishes a mechanism for its long-term viability, and provides, manages, and improves training related to the Philippine eLib's/iPeL's promotion and information dissemination.

The DOST continues to commit itself to the digital era by shifting its library services to the digital space. A total of 2,307,205 library clients availed of DOST-STII online library services in 2021. Of this number, the DOST-STII reached 2,172,693 online library clients accessing Science.ph and the SciNet Integrated Library Management System-Online Public Access Catalog or SILMS OPAC, especially during the study-at-home and work-from-home era. In 2021, a total of 137 material requests were received through several platforms, and 119,552 downloads of library resources after the massive promotion drive of the DOST-STII Online Library Literacy Program (DOST-STII OLLP), a far cry from its 2020 performance of 51,111 downloads. Further, IRAD accommodated 47 schools and institutions with a total of 5,405 library clients who participated in the DOST-STII OLLP, obtaining an overall satisfaction rating of 91.05% (Very Satisfactory or higher). This client reach is also 98.13% higher than the previous year.

As the resources grow every year, it is to be noted that 819 new library materials were acquired and processed, posting a 27.8% increase from the previous year. This included 399 copies of serials, 122 titles/copies of books, and 298 titles or 321 copies of theses. The Digitization Section of the DOST-STII, where literature and manuscripts are being scanned and digitized, came up with 40,950 OCR-ready pages on Filipiniana materials and 2,804 full-text articles uploaded on Philippine eLib and SILMS databases. In addition, IRAD has initially converted 13 DOST-STII library resources to text-to-voice-ready format for visually challenged clients.

Eight Lessons Learned from the Pandemic

By Richard P. Burgos, Director, DOST-STII

1. **Remember your friends.** Acts of goodwill and promoting solidarity go a long way.

When the livelihoods of its media contacts were under threat, the DOST-STII assembled food packages for them out-of-pocket; press meetings were instead held virtually, as was the agency's memorial for veteran publisher Estrella Z. Gallardo, who passed away that year.

2. **Make size matter.** When faced with shortcomings, focus on your strengths.

In leveraging its digital native programs STARBOOKS and DOSTv, remote and economically challenged schools and communities were able to access their S&T content regardless of their location.

For STARBOOKS, the DOST-STII developed three mobile apps for android devices throughout the year; earlier, in February 2020, the Department of Education (DepEd) signed a memorandum of agreement with the agency to adopt STARBOOKS into its learning commons and to pre-load it on all gadgets and computers for nationwide deployment.

By the end of 2020, over two million users accessed its content online, and 5,412 STARBOOKS kiosks were

deployed nationwide in 2021. Meanwhile, for DOSTv, the S&T broadcast hit television screens through airings in PTV4, GMA7, and GNN while expanding its airwaves by working with Radyo Pilipinas 1.

3. **Identify your spokesperson and be heard above the din.** Building credibility in one's spokesperson is essential for disseminating information.

In 2016, the DOST-STII created for Secretary Fortunato de la Peña the hashtag "#ScienceForThePeople" from his initials to boost his visibility. Today, the hashtag is used by 78,000 Facebook users, putting the Secretary's voice at the front of news feeds.

4. **Pivot.** Adapting to circumstances is key.

Ninety-one percent of our staff were trained successfully when the agency's internal learning and development programs resorted to online courses and webinars. For the first-ever online edition of the National Science Technology Week, the DOST-STII's social media campaign reached over a million people in contrast to the previous editions' few thousands. Meanwhile, the revert to live streams provided Secretary de la Peña a platform to deliver weekly reports, which helped the media pick their leads.

5. **Perform.** Continuous improvement and providing great value are the drivers of quality management excellence.

Through various partnerships and innovative solutions, 2020 saw increases of as much as 114.53% in STARBOOKS' registered online users and 37.56% in social media outreach. The agency's services also received stellar user satisfaction ratings.

6. **Excel.** Following through with one's commitment to excellence does not go unnoticed.

STARBOOKS and DOSTv were two of the projects listed in the National Economic and Development Authority's (NEDA) National Priority Plan for 2021 and 2022.

In 2020, DOSTv received three Anvils from the PR Society of the Philippines, four Gandingan Awards from the University of the Philippines Los Baños, including the Most Development-Oriented Radio/TV/Online Platform, and it was a finalist in two Catholic Mass Media Awards categories.

In 2020, the DOST-STII received an unqualified opinion from the Commission on Audit on its 2019 financial statements, the highest audit rating for a government institution. It also maintained its 9001:2015 ISO accreditation with no non-conformities and two best practices.

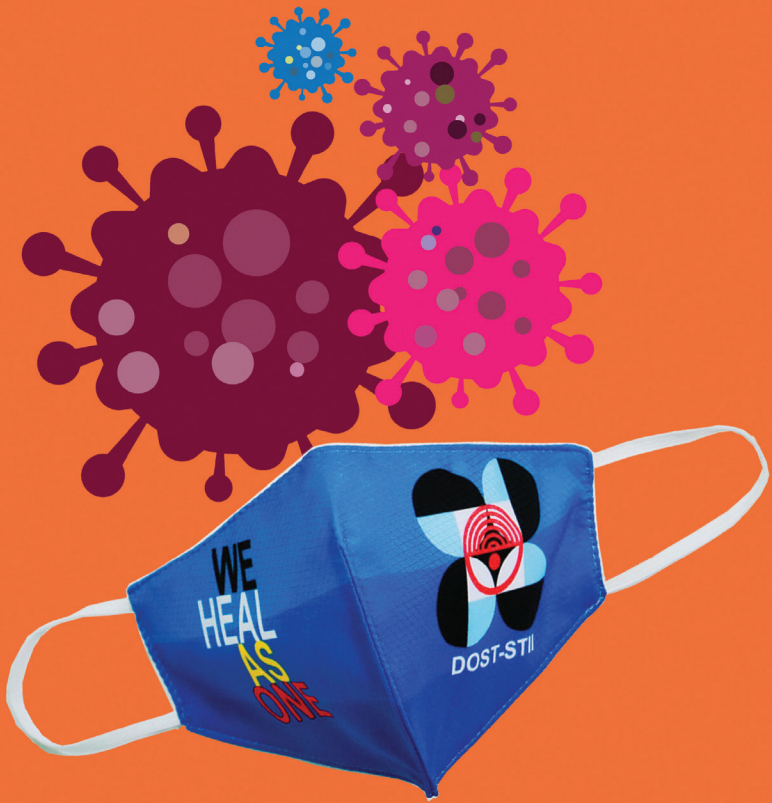
7. **Monitor, evaluate, recalibrate.** Looking at the data is critical to gauge progress.

The level of national awareness of S&T was 6% in 2017 and doubled to 13% in 2018. It rose to 16% in 2019

before reaching 23% in 2020, 24.5% by the end of 2021, and jumped to 41% in June 2022, then closed the year with 47%. The increase in percentage results from the agency's collaborations with external organizations in delivering 1,045 promotion services in 2020 to 5,495 by the end of 2021.

8. Be grateful.

Practicing gratitude is what opens us up to the needs of others and what is truly valuable, enabling us to receive more blessings and begin healing.


WE
HEAL
AS
ONE
DOST-STII

CHAPTER FIVE

PIVOT, PERFORM, EXCEL

An actual photograph of the face mask symbolizing the adaptability, agility, and resiliency of the Institute and its response to embrace the new normal while thriving amid the virus is rendered as vector art. These elements interact with one another amid a splash of vibrant colors that show dynamism against adversities as the Institute recalibrated its organizational strategies and recast its day-to-day operation to continue to fulfill its mandate of providing science, technology, and innovation information to its various stakeholders.

Committed to the well-being of employees, the DOST-STII began a 3-month Biggest Loser Challenge to improve exercise and nutritional habits and embrace a lifestyle change.

DOST-STII has a small team, but the institution has been built to adequately fulfill its mandate as an information agency to the core.

This is because a lot has been poured into its people. They are the most important resource. Librarians, writers, information analysts, and communication specialists double as information brokers, publicists, advertising executives, and image builders for the DOST and DOST-STII. With the advances in information and communications technology (ICT) and the increasing demand for S&T information, the DOST-STII must

keep pace by employing and training communication and information professionals who can meet the standards of competent service.

ISO ACCREDITATION AND CSC PRIME HRM

In the Philippines, attaining an ISO accreditation is known to be a highly tedious process. An accreditation from the ISO, short for the International Organization for Standardization, is sought by organizations as it certifies

that the quality of their products, services, and overall performance is at par with global standards.

The DOST-STII applied for this accreditation and was first certified in 2018. From here, each required annual surveillance audit has been passed, and it was reaccredited for another three years up to the time of writing.

Findings by an independent auditing firm saw that the Finance Administrative Division (FAD) clearly defined its organizational competency requirements and training needs analysis for its workforce. There is also a well-established system of inputs and outputs for its accounting, budget, and cashier processes that demonstrates the identification and traceability of the payment process. The process of paying suppliers is also well-monitored, evaluated, and analyzed to eliminate any gaps.

The same was also found in the publication of the *Philippine Journal of Science*, where processes were analyzed and monitored, enabling staff to easily identify areas for improvement and enhancement of customer satisfaction.

Moreover, FAD was commended for its promotion of Pivot-Perform-Excel (PPE), which is evident from the several milestones it achieved even during the pandemic.

Other organization improvements noted by the firm included:

1. Development of Leadership Program for STII Division Chiefs and Supervisors
2. Revision/enhancement of STII Merit Selection Plan
3. Crafting of Policies with OSH Committee: COVID-19 Management, Tuberculosis, Hepatitis B, HIV/AIDS, Mental Health, and Drug-Free Workplace
4. Spearhead the DOST-wide training for FAD Chiefs and HRMOs on Full-Cycle Learning and Development
5. Development of online forms: Document Request, Recruitment Portal, Client Feedback

6. Ongoing development of the digital Employee Handbook
7. Ongoing collaboration with MISPS in the development of Online Performance Management System (PMS)

To accomplish all these, a Quality Management System (QMS) Team was put into place from within the ranks. It was composed of four staff members with key roles, which are as follows: Quality Management Representative, Internal Quality Audit Head, Risk Management Committee Chair, and Document Custodian.

Arlene E. Centeno, FAD chief, was the Quality Management Representative who ensured that the Quality Management System (QMS) was established, implemented, and maintained in accordance with the ISO 9001:2015 standard. She was also in charge of promoting awareness of customer requirements throughout the organization, reporting and updating supervisors, and liaising with external parties on matters relating to the QMS.

As Internal Quality Audit Head, Cecille Rose R. Suñga was responsible for preparing the Audit Program, Audit Plan, Qualification Matrix, and Generic Audit Checklist and implementing the QMS internal quality audit based on the approved audit plan.

Meanwhile, Alan C. Taule, IRAD chief, took charge as the Risk Management Committee Chair, overseeing the implementation of risk management activities and projects. He ensured that the DOST-STII's risk management system was properly communicated and integrated into all delivery units. He also conducted periodic reviews to assess compliance with and the effectiveness of processes and procedures.

Lastly, Ma. Teresa M. Rosqueta from FAD was designated as the Document Custodian. She maintained and controlled the QMS documents and served as Secretariat during management reviews and document reviews. She also prepared master lists for various documents and records and put together Section 00—the Users' Guide—of the Quality Manual, Procedures Manual, Work Instructions Manual, and Forms Manual.

The ISO accreditation is a testament to the DOST-STII's dedication and grit, but it is not the only recognition we received in 2021. Internally, the DOST Internal Audit Service (IAS) gave the DOST-STII the highest rating among the 25 DOST agencies it had assessed. Externally, the Institute received the PRIME-HRM Bronze Award (Maturity Level II) from the Civil Service Commission (CSC). The award, which was granted under the CSC's HRM program, recognizes DOST-STII's steady efforts at excellent human resource management.

The CSC Program to Institutionalize Meritocracy and Excellence in Human Resource Management (PRIME-HRM) is a mechanism that guides government agencies toward HR excellence. Under PRIME-HRM, the CSC assesses an organization based on four HR pillars: recruitment, selection, and placement; learning and development; performance management; and rewards and recognition.

There were many policies and forms under these four pillars that needed to be crafted and implemented in the DOST-STII. These included the adoption of a competency framework and behavioral event interview, the use of competencies in assessing gaps and developing training designs, the strong and constant involvement of the Performance Management Team during the review of commitments and targets, and the evaluation of both performance and behavior of candidates to ensure that awardees of the Director's Awards are true models of excellence and character.

As part of the process, the DOST-STII was required to conduct a self-assessment to identify the gaps and assistance needed by the Institute to achieve the Maturity Level II accreditation. Once ready, the CSC NCR (National Capital Region) scheduled a two-day online assessment led by CSC Field Office - BSP Director May Antonette Arriola.

Conducted over Zoom, the evaluation consisted of interviews with the director, human resources staff, committee members, and other randomly selected staff. The organization's facilities and records section were also inspected via a live tour. It was a very tedious process.

And yet, it proved to be worth it. On April 21, 2021, after weeks of hard work, the DOST-STII earned its Bronze Award, classifying the organization as one with Process-Defined Human Resource Management, meaning all the mechanisms have been put in place to secure smooth operations when it comes to leading, motivating, and taking care of the employees.

An initiative to be very proud of is the internal DOST-STII awards ceremony. There are eight major awards, specifically the Hall of Famer, the Director's Award, the Gantimpala-Agad Award, the Retirement Award, the Achievement Award, the 5S Compliance Award, the Innovation Award, and the "U" Make A Difference Award.

The Director's Award is the most prestigious, with five subcategories representing all salary grades: Outstanding Manager (Salary Grade 24), Outstanding Senior Technical Staff (Salary Grade 18–22), Outstanding Junior Technical Staff (Salary Grade 04–17), Outstanding Senior Support Staff (Salary Grade 18–19), and Outstanding Junior Support Staff (Salary Grade 01–16).

While each award has specific criteria, a thorough deliberation process for all categories is followed. Once a candidate meets all nominee requirements—such as the attainment of Very Satisfactory (VS) performance ratings for two semestral periods within the reference year, to name one—the DOST-STII PRAISE Committee convenes for the initial screening of nominations. Those who pass will still be subject to validation. The Committee shall interview two randomly selected colleagues or peers and the candidate's immediate supervisor or division chief. They will then be rated based on the data gathered. Afterward, the DOST-STII PRAISE Committee shall hold a meeting for final deliberations based on the nominee's documents and validation results.

For all the award categories, rewards range from cash prizes of PHP 10,000, PHP 5,000, and PHP 2,000 (or around USD 200, USD 100, and USD 40, respectively) to tokens with cash equivalents, trophies, and certificates of recognition.

The year 2018 saw the launch of a special award category outside the PRAISE recognition program for outstanding employees. The "Strongest Link" award highlights an individual team member's performance that significantly impacts and benefits not only the DOST-STII but other agencies within the DOST and beyond. The winner receives a real, pawnable gold chain courtesy of the DOST director himself.

The first recipient was Cecille Rose R. Suñga, who was an accountant at that time. Through her passion and creativity, she helped effectively produce a presentation that resulted in the DBM almost doubling the agency's 2018 budget from the previous year's numbers.

For Cecille, "It is a huge honor for me to receive the 2018 Strongest Link award. As the saying goes, 'a chain is only as strong as its weakest link'. Being the strongest link means one should have the power to reconnect the chain to continue to work harmoniously together. I felt a deep sense of responsibility and gratitude for being bestowed with this award. It is truly rewarding to be part of the Science and Technology community and be able to contribute my knowledge and skills to the advancement of the Institute."

However, while these rewards are indeed valuable and do entice, team members have shown that what truly drives them is the working environment that the DOST-STII has nurtured.

Jaqueline C. Ballesteros, named Outstanding Administrative Staff at the 2020 PRAISE Awards—for her work as Administrative Officer V at the FAD—said in response to her win, "*I am very happy to accept this recognition, tamang-tama po kasabay ng celebration ko of 10 years working as a public servant. Working with DOST-STII is easy even during challenging times!*" [I am very happy to accept this recognition. At the same time, I am celebrating my 10th year of working as a public servant. Working with DOST-STII is easy, even during challenging times!]

IN THEIR WORDS

Strongest Link Awardees

"Being one of the recipients of Director Richard Burgos' initiative and personally funded award, I can attest that the Strongest Link Award is effective in bringing out other best qualities of the employee. The recognition of a leader like Director Burgos has given us a sense of value and confidence that increased our motivation, engagement, commitment, and productivity. Personally, I became more inspired and determined at work, knowing that what I do is not in vain and that I am appreciated by our leader. It adds to the meaning of our job." - *Ma. Kristine B. Reyes, Administrative Officer V, 2022 awardee*

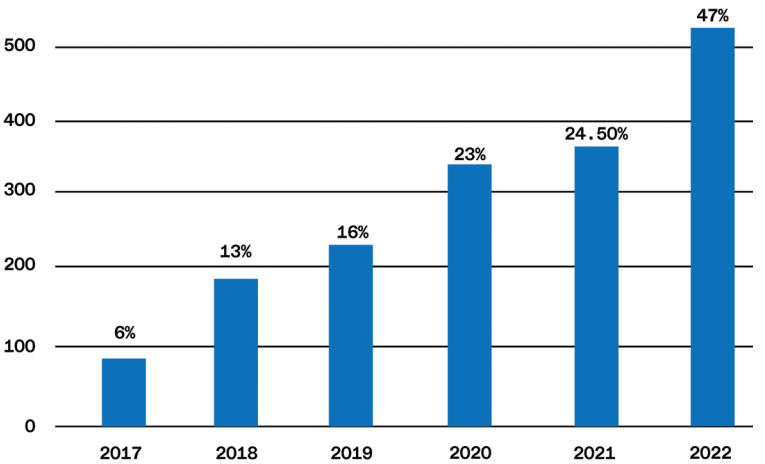
"This award, though personally gratifying and humbling, is but a step into another path. There is more to do and there is more that can be done. Let this award continuously serve as inspiration and motivation to everyone in the institution." - *Ma. Lotuslei P. Dimagiba, Planning Officer III, 2022 awardee*

DOST- Internal Audit Service on the Baseline Assessment of Internal Control System July 27, 2021

"We would like to congratulate STII for garnering the highest rating among the various DOST agencies IAS has assessed so far, or about 25 agencies to date, in terms of the five internal control components evaluated. STII was able to leverage its strength in communication in setting a strong tone at the top and effectively cascading this to the entire organization." - *Dir. Maria Teresa B. de Guzman, Director IV - Internal Audit Service*

BEING RECOGNIZED HAS VALUE

From a low of 6% in October 2017, the National S&T Awareness level rose to 13% in April 2018, 16% in December 2019, 23% in December 2020, and 24.5% in 2021, jumping almost seven times to 41% in June 2022 and to 47% in December 2022.



PUBLIC AWARENESS ON S&T

A SURVEY BASED ON 1,440 FILIPINO ADULTS LOCATED IN NCR, LUZON, VISAYAS, AND MINDANAO

Additionally, according to the Philippines' first and only registered Lobbying and Campaigns Management firm Publicus Asia Inc., the DOST ranked 6th in approval and trust ratings in the 2022 Pahayag Quarter 3 survey. The year 2021 also saw the Philippines rise to 51st among 132 economies featured in the Global Innovation Index (GII), which ranks world economies according to their innovation capabilities, up from 100th in 2014. To a certain extent, it can be believed that the communication arm of the DOST could have contributed to these remarkable numbers.

Proudly, the institute's major programs involving communication and information generation, including "DOSTv: Science For The People," "STARBOOKS" (Science and Technology Academic Research-Based Openly Operated Kiosks Station), and *S&T Post* magazine, received awards from different bodies, such as:

- Best Special Feature (Winner) at the 43rd Catholic Mass Media Awards (CMMA): "Fides in Scientia: Faithfully serving the nation through science" by Allyster A. Endozo, published in the S&T Post
- 18th Philippine Quill Awards: STARBOOKS received Excellence in Government Communication Programs
- Gandingan ng Kaunlaran – Most Development-oriented Women's Program: DOSTv: Science for the People; Expertalk Online: #Women in Science Saving the Environment through Community Empowerment
- Most Development-oriented Livelihood Program: Expertalk Online: Made in the Philippines Products Week
- Most Development-oriented Science and Technology Program: DOST Report: DOST Drug Discovery in the New Normal
- Special Citation, Gandingan ng Agham at Teknolohiya: Fortunato T. de la Peña: DOST Report

Everybody felt so proud to receive the trophies, an affirmation of the fulfillment of one core value—excellence.

In fact, engaging new partners is now a deliverable. Technical divisions have included in their Division Performance Commitment and Review (DPCR) documents the commitment to sign up six new partners per year. That is six for IRAD and six for CPRD, a total of 12 new partners a year.

It helps that "DOSTv: Science For The People" and "STARBOOKS" were included once again in the 2021 National Priority Plan (NPP) of the National Economic and Development Authority (NEDA). When partners and sponsors see a project in the NEDA national priority plan, they sign up. Being recognized has value.

To build on the momentum in government communications, it is hoped that the DOST-STII can have an academy. It is going to take time, but the plans as of now are to develop modules and meet with the Local Government Academy (LGA) to gain insights on how to best proceed. Previous webinars—on topics like camera photography and videography, among others—are well-loved by audiences, with certain topics already getting requests for a repeat.

Strengthening the DOST Media Core is also the goal. This is the DOST's network of science communication specialists, information and promotions managers, and practitioners with specific assignments and functions in the areas of science communication in forming and shaping a science and technology agenda and guidelines on how to communicate this. In this, DOST-STII will keep working with partners who specialize in science communication frameworks for non-experts.

AN INCLUSIVE FUTURE

The DOST-STII upholds its commitment to making employees and partners feel welcome and radiating this spirit to people of all backgrounds, identities, and classes.

First, is the commitment to mainstreaming Gender and Development (GAD) in all facets, including communication. Online activities, such as the "DOST-STII GAD Webinar Series: Enhancing GAD Awareness among S&T Practitioners," and a webinar on basic GAD concepts as part of celebrating the Library Information Services (LIS) month were conducted. Facility enhancements were also done, specifically on establishing a Mother and Child Care Center in the office as well as the renovation of a Gender Neutral Restroom. Various GAD promotional activities were also done, such as featuring Filipina scientists and women in science in broadcast programs, showing short videos on GAD in the online library orientations offered by the institute as prescribed by the Philippine Commission on Women, and holding a VAW (Violence Against Women) Movie Screening of Verdict (2019) for all DOST

Director Richard Burgos (right) receives the 3rd place award of the DOST GAD Mainstreaming Award on behalf of the DOST-STII. The award recognizes DOST Regional Offices, attached agencies, and Philippine High School Campuses that serve as outstanding models in cultivating safe and gender-fair work environments and gender-responsive science and technology programs.

employees. In the movie, an abused and battered wife stands up for justice against her alcoholic husband.

The DOST-STII was the first DOST agency to use the GAD Functionality Assessment Tool in 2022 and shared its experience and learnings to the participants' appreciation and inspiration at the Mactan Island assembly in Cordova, Cebu last October 26-28, 2022. Spreading knowledge, information, and inspiration like this is a very important advocacy of DOST-STII.

To help information managers weed out inappropriate gender biases in written communications, the institute under the Information Technology Unit (ITU)—a support unit that provides technical services such as IT

assets and systems management, hardware servicing, and development of office productivity solutions and products—created the Gender Language Checker tool or GLC Tool. The GLC Tool provides gender-neutral word suggestions on several gender-biased words used in day-to-day written communications, press releases, and institutional publications. This tool is open for public use and can be accessed soon through an online portal available to both account-based and non-account-based users. A revamp of the library collection was also made by acquiring seven GAD-related books and repackaging Precalculus Lessons for Deaf and Hearing-Impaired Users of STARBOOKS.

To reach areas with non-techies, the ITU developed a wizard-type installer where one can simply follow a series of steps and a few clicks to set up and configure the STARBOOKS offline system fully. For the longest time, the setting-up and configuration from scratch have been a challenge for regional deployment officers. Often, the systems' technical nature proves to be too much and becomes a daunting task, especially for the deployment officers with minimal ICT background. But not anymore. Following this framework, a wizard-type updater for STARBOOKS was also developed—a big leap from the previous manual extraction of data and digital assets to keep STARBOOKS systems updated.

To help maintain the continuity of essential frontline services during an extreme natural calamity, the ITU spearheaded the creation of resilient work procedures should there be work disruptions caused by the breakdown of critical infrastructure. The Management Information Systems and Planning Section (MISPS) developed the Institute's policy and its corresponding implementing procedures to ensure that basic services can resume and the availability of the documents related to the process and documentation procedures are in place.

With the imminent threat of losing physical assets such as the workspace, basic office equipment, and basic utilities, the DOST-STII developed the protocols to ensure continuous operation by providing remote access to pertinent documents and information. The established Policy and Procedure outline the location and methods for individuals and groups

to manage mission-essential files for storage and remote recovery. This also includes the types of assets and individual responsibilities in securing workable backups.

Harnessing the power of digital technology, the DOST-STII, through the Communication Resources and Production Division, continues to beef up its social media presence through extensive content creation for DOST Philippines, the DOST-STII, NSTW, Science Journo Ako, and the *Philippine Journal of Science* Facebook pages. Together, they have a total follower count of 223,906 across Facebook, Twitter, and Instagram. Out of that, the DOST-STII was able to reach 30,053,325 users, 50,434,344 impressions, and 197,329 likes and followers by 2021.

The journey is not complete. But the seeds have been sown.


ST-STII
IQNet

CHAPTER SIX

IT TAKES A VILLAGE

To carry on both the intensified information and communication activities done by the DOST and communicating science to the people, continuous enhancement of the internal system of organized communication is crucial. This involves reconstituting the DOST Media Core and strengthening its role in the DOST System.

"Alone, we can do so little; together we can do so much."

— Helen Keller

"In teamwork, silence isn't golden, it's deadly."

— Mark Sanborn

Investing in research and development (R&D) is the work of many, not one, and communicating it is a shared responsibility.

A solid foundation was established in 2016 when the DOST created a structure for STI projects to take seed in the whole country through its launch of the Science for Change Program (S4CP). It touches all sectors of society by establishing Niche Centers in the Regions for R&D (NICER) Program, Collaborative R&D to Leverage PH Economy (CRADLE) for RDIs and Industry Program, R&D Leadership (RDLead) Program to train experts in the provinces, and Business Innovation through S&T (BIST) for Industry Program to assist Filipino-owned companies in acquiring relevant technologies.

In 2021, DOST Undersecretary for Research and Development Rowena Cristina L. Guevara noted that the archipelagic nature of the country has long limited its capacity for research and development, especially in far-flung areas, with many of the research efforts previously confined to three regions—namely NCR, Region IV-A, and Region III.

Undersecretary Guevara said that the S4CP enabled an inclusive innovation ecosystem with various opportunities for stakeholders and industry players that "address societal problems that translate to community transformation and regional and national socioeconomic development."

In 2022, S4CP was recognized during the 2022 United Nations Public Service Awards (UNPSA). The United Nations commended the S4CP's contribution to the attainment of Sustainable Development Goals—a set of 17 interconnected global goals designed to achieve a better and more sustainable future for mankind.

DIALOGUES AND POLICY FORUMS

With science communication taking on various forms, the DOST engaged in interactive events to spread information on the impact of science, technology, and innovation on citizens' daily lives. Annual regional policy forums in Luzon, Visayas, and Mindanao gather local government officials and community members to engage them in adopting R&D projects that could benefit them—from microbial bioremediation of wastewater in mining sites in Benguet to disaster management towards climate change adaptation in Iligan.

The incorporation of laypersons and lawmakers in these forums has allowed more citizens to be involved in not only the adoption and utilization of the policy through the memorandum of commitment (MOC) but also in identifying and clarifying its inputs in existing public policies and laws.

In previous years, the DOST-National Research Council of the Philippines (DOST-NRCP) partnered with Congress to communicate the importance of evidence-based policy development, a collaborative effort to assist lawmakers with a limited understanding of scientific concepts.

Policies are meant to enable science and technology to flourish within the country. However, given the rapidly transforming international landscape, it has become apparent that local legislation is outdated and in need of replacement or amendment.

Many of these policies hold back scientific, economic, and sociopolitical progress, from the everyday measurement standardization through the National Metrology Act of 2003 and the National Measurement System

Various dialogues, such as the Food Innovation Dialogue under the Food Innovation Center and breakfast forums under the Management Association of the Philippines-Agribusiness and Country Development (MAP-ABCD) Foundation, are also conducted to bring together stakeholders and arm them with knowledge of the latest developments.

(R.A. 9236) to the process of acquiring materials and resources through government procurement (R.A. 9184).

The process of overhauling policies integral to societal functions has encouraged the DOST to invest in research assessing policy constraints and identifying existing gaps that must be addressed with amendments. In the 2019 National Convention on Statistics, the DOST Central Office brought to the fore the pertinent issues hounding the science department, like the delayed budget release, procurement process, and extensive time in signing agreements that affected project implementation under the DOST-GIA Program.

To address these, researchers from the UP Los Baños College of Public Affairs have been conducting stakeholder meetings and formal assessments as a part of a larger study under the DOST-Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD) to determine the necessary changes to be made to the government procurement act, cash-based budgeting, the granting of honoraria and honorarium amount cap for government personnel, and the hiring of contractual workers.

Apart from these, funding has been allocated to studies that gather data from underrepresented groups that may have previously been outside of policy consideration—an example of which are those reviewing the health-seeking behavior and socioeconomic profiles of select indigenous peoples (IPs) communities in Negros Occidental. Such research projects help provide proof of how policy-making bodies have expanded to consider research in the social sciences, especially toward engaging better with communities.

MAINSTREAMING: TECHNOLOGY TRANSFER DAY, CONTESTS, AND PRESENTATIONS ABROAD

In order for DOST-led projects to integrate into the mainstream market, the DOST-Technology Application and Promotion Institute (DOST-TAPI) utilized a promotional-cum-communication tool through technological adopters, which was called the Technology Transfer Day. In 2016, the first National Technology Transfer Day was held with the theme "PROMISE: Promoting Research and Outstanding Milestones in Innovation and Science for Entrepreneurship." This event helped make three technologies known to the public. The Visayas and Mindanao-wide Technology Transfer Day were held in Ormoc City and Davao City, respectively.

With its initial success, the Regional Technology Transfer Day was then held the following year in Cagayan de Oro City, Cebu City, Iloilo City, Pampanga, and Santiago City in Isabela, where five projects were commercialized. The next two years saw the event grow with the aid of technology generators. In 2019, the Technology Transfer Day Project facilitated the ASEAN TechTrans Forum in Mactan, Cebu. The second batch of DOST Regional Offices Meet TechGens was held, as well as the second National Technology Transfer Day and the Regional Technology Transfer Day in Ilocos Region, all geared at promoting local technologies. Even with the COVID-19 pandemic, the DOST was still able to conduct online conferences for technology adopters and investors to showcase DOST-funded-and-generated technologies.

In line with the technology transfer initiative, DOST-CALABARZON held a series of online webinars starting in 2020 called Strategy to Accelerate and Revitalize Technology Transfer (StARTT), wherein 12 out of 25 of the shortlisted technologies presented were assessed to be commercialization-ready.

By 2021, five years after its first iteration, the DOST-TAPI was able to hold 41 technology transfer events at both the national and regional levels. To sustain the momentum in generating public awareness of local technologies, the DOST-TAPI also organizes events to promote innovation, creativity, and ingenuity among Filipino inventors and innovators.

With this objective in mind, the DOST-TAPI taps the DOST Regional Offices to hold Regional Invention Contest and Exhibits (RICE) competitions in their respective regions. RICE is conducted biennially to recognize the skills and talents of the students, researchers, and inventors. It serves as a platform that encourages people to showcase their innovative capabilities and stimulate technology development that is sustainable, as well as viable, economically and commercially. Through RICE, programs such as Intellectual Property Rights (IPR) and prototype testing are provided to inventors.

Participants compete in six categories: (1) The Outstanding Invention or Tuklas Award, (2) The Outstanding Utility Model or Unlad Award, (3) The Outstanding Industrial Design or Banghay Award, (4) The Outstanding Creative Research or Likha Award, (5) The Outstanding Student Creative Research or Sibol Award for High School and (6) College students. Three winners are selected in each category.

Regional winners receive cash incentives and recognition certificates as prizes. First-place winners in each region are automatically part of the finalists in the bigger competition, the National Invention Contest and Exhibits (NICE).

Besides competitions serving as a communication tool, the DOST also implements enabling programs that empower communities, one of which

is the Community Empowerment thru Science and Technology (CEST) program that helps fight poverty by targeting the poorest communities in the country. Various science and technology interventions in the field of health and nutrition, water and sanitation, basic education and literacy, livelihood/economic enterprise development, and disaster risk reduction and climate change adaptation are introduced.

As of early 2020, the CEST program has already assisted 1,406 barangays and group beneficiaries in 342 CEST communities and municipalities nationwide. According to the late DOST Undersecretary for Regional Operations Brenda Nazareth-Manzano, who formulated and implemented the program, "*Eto 'yung ating avenue kung saan natin puwedeng itransfer or ipromote or ipa-adopt 'yung mga technologies ng DOST—and other [projects na] funded ng DOST—na ma-adopt sa community and really make a difference*." [This is the avenue where we can transfer, promote or adopt the technologies from the DOST—and other projects funded by the DOST—to be adopted by the community and really make a difference.]

Another flagship program worth communicating to the people is the Small Enterprise Technology Upgrading Program (SETUP), which aims to provide MSMEs access to technological interventions that address their needs. Enterprises span a wide range of industries, including food processing, furniture, marine and aquatic resources, horticulture and agriculture, pharmaceuticals, ICT and electronics, gifts, houseware and decors, and, finally, metals and engineering. These innovations can help streamline their processes and operations, which will eventually lead to an increase in sales and profit. The DOST also supports these MSMEs by providing training sessions and consultancy services besides tools and equipment.

The agency has also dabbled in e-commerce by setting up Onestore.ph, a platform where DOST-supported MSMEs can sell their high-quality, locally made products, thereby maximizing the power of digital technology to make locally produced goods known to many. This enables items made from all over the Philippines to be easily accessible to a wider market. Through this website, customers are able to shop effortlessly, while retailers can bring their specialty items to the doorsteps of their target consumers.

Another communication initiative undertaken by the Industrial Technology Development Institute (DOST-ITDI) is the revival of the "Kitang-Kita Na sa TekPinoy.biz Series," designed to teach viewers 55 simple and cheap ways to prepare meat, fish, fruits, and vegetables from 14 machine-based technologies.

The series provides the public with free online reading materials, which they can use to spark livelihood ideas, especially during the COVID-19 pandemic. Moreover, online technical demonstrations of technologies in the series can even be requested. TekPinoy's series includes materials on various practical technologies like fruit juice concentrate processing, candle making, and bioreactors.

According to an article released by the DOST-ITDI, "These technologies are simple, adaptable, and useful in any situation, be it normal times or trying times like during disasters and the current pandemic."

Not only can Filipino ingenuity be promoted locally but even overseas, as evidenced by the attendance of Dr. Maria Patricia Azanza and her colleagues at the 2016 Asia-Pacific Economic Cooperation. Participants of this event, which was held in Peru, are involved in supporting management systems that would help their respective countries.

She was able to present the Food Innovation Center (FIC) network at a workshop supporting MSMEs through Standardization. FICs situated in state universities and colleges (SUCs) across the country are areas where one can provide concepts and develop food prototypes and market samples. Meant to be for research and development and not a money-making opportunity, this allows SUCs to go to market with processed food and have access to a facility and technical expertise.

The platform for these centers follows the triple helix model, forming a partnership between the government (the DOST), the industry (MSMEs), and the academe (SUCs). The government developed the very concept of FIC and provided first-generation information on STI. The academe, which is the group Dr. Azanza represents, gives infrastructure and stewardship. People are hired to transfer know-how, conduct meetings

to evaluate products and development, and introduce new information, guidelines, and technologies. The academe serves as the incubator of STI infrastructure, which will benefit the industry.

With sustainability being a key factor in determining which SUCs to work with (specifically their capability to eventually take over the work of the FICs even without the DOST), various types of FIC engagements were presented to the participants of the summit: The industry could rent pieces of equipment and the full facility and be provided with technical advice from an in-house expert, too. They will also be evaluated whether they possess a certain level of technical skill to manage the tools.

Dr. Azanza's presentation caught the attention of Brazil and Peru, who asked for a copy of her slides. In communicating this innovation, foreign stakeholders expressed interest in adopting the same platform because they found the system easy to follow.

THE DOST MEDIA CORE

To ensure the momentum of the DOST's strong communication efforts, the DOST Media Core was created in 1991 as an organized network of information and promotions managers, science communication specialists, and practitioners in the DOST system with specific assignments and functions in the areas of science communication. Reconstituted in 2021, it will serve as the central representation of all communication practitioners and specialists in the DOST.

The DOST Media Core complements and amplifies the efforts of the Science and Technology Information Institute (DOST-STII) and the DOST in communicating and advocating for science and technology through projects and activities that will further bring S&T closer to the Filipino people, enabling them to make informed decisions in their everyday lives. It seeks to use mass communication media, web media, alternative media, and traditional channels of communication to reach all sectors of the Filipino society. It also aims to raise the standard of professionalism among and build the capacity of science communication

practitioners and develop programs through the sharing of expertise and resources among members of the DOST Media Core and institutions within the DOST system.

Together with DOST-STII, the Media Core shall set the direction, create plans, and establish protocols necessary for advancing the communications efforts of the DOST. The DOST-STII and the Media Core have one goal, which is to ensure that the DOST's goal of effectively communicating science to the Filipino people is achieved.

The DOST Media Core is envisioned as instrumental in advancing the cause of S&T communication, where S&T knowledge and information are translated to better lives for more Filipinos. Communication is an integral part of S&T development. In the same way, S&T is integral to a nation's economic development.

The DOST Media Core's mission is to assist S&T communication specialists and practitioners in the DOST system to become more effective in the performance of their functions and practice of their profession. It shall strive to enable and empower each and every member to develop and implement specific communication programs and projects in their respective agencies.

The DOST Media Core, as a network, is composed of information and promotions managers, science communication specialists, and practitioners in the DOST system. Each agency, unit, and Regional Office designates a primary and alternate representative to the Media Core through an official communication submitted to the DOST-STII Director. Any change in the said designation shall also be officially communicated to the DOST-STII.

The leadership structure of the DOST Media Core is composed of one Chairperson, seven Vice Chairpersons handling different areas of concern, a Secretariat, and an Advisory Group that is composed of all the Undersecretaries of the DOST.

Each Vice Chairperson shall handle one of the following areas of concern:

- Research and Development (R&D) Communication
- Regional S&T Communication
- S&T Services Communication
- Disaster Risk Reduction and Climate Change (DRRCC) Communication
- External Corporate Communication and Crisis Communication
- Capacity Building in science communication for Media Core members and other science communication practitioners in the DOST system
- Monitoring and Evaluation and Communication Research

The elected Vice Chairpersons shall serve for two years. A Secretariat is assigned from the DOST-STII to provide substantive and administrative support to the Media Core. The Advisory Group, composed of all the Undersecretaries of the DOST, shall provide guidance and level-off expectations of the DOST's top management to the Media Core.

The Chief Science Research Specialist of the Communication Resources and Production Division (CRPD) of the DOST-STIl serves as the Chair of the DOST Media Core, while the Vice-Chairpersons shall be selected through a nomination and election process by all the members.

For the agencies and regional offices whose members were among the elected and appointed officials to the Media Core, the officers will automatically be the principal designated representatives of their respective agencies and regional offices. However, for the agencies and regional offices whose representatives are not officers, a Principal Designated Representative, as well as an alternate member of the Media Core, will have to be named by the agency and regional office. The officers and officially designated agency representatives shall coordinate closely regarding the plans and programs to be implemented by the body.

The specific functions of the DOST Media Core are:

1. To complement and support the efforts of the DOST system in S&T communication, specifically in the areas of strategic communication, S&T communication research, social marketing and mobilization, public relations, and other aspects of S&T development communication;
2. To strengthen collaboration among the various councils, collegial bodies, agencies, regional offices, and the different operational units of the DOST central office in the planning and implementation of communication strategies programs and activities, which reflects the DOST brand of service, technology, and innovation as defined in the S&T agenda;
3. To identify areas of competency development of S&T communication practitioners in the DOST system that may be addressed through available scholarships, trainings, and certification programs, adhering to the competency requirements in the areas of development communication, social marketing and mobilization, journalism, broadcasting, and communication research.

Existing parties or groups within the DOST system performing similar tasks should be aligned and calibrated with the functions and operations of the DOST Media Core.

When it comes to funding, the programs and projects of the DOST Media Core shall be funded through financial assistance from the DOST and/or other DOST agencies through the DOST-STII. It shall also explore other resource-generating schemes, such as partnerships with other organizations and sponsorships by the private sector. The DOST-STII shall serve as the 'anchor institution' for the various programs and projects to be undertaken.

Agencies and Regional Offices shall shoulder the travel expenses of the members attending the meetings of the DOST Media Core.

TASK GROUP

In the interest of the service and to establish a Science Communication Agenda, a Task Group was created composed of a Chairperson, representatives from the DOST-NRCP, DOST-PCAARRD, DOST-PCHRD, DOST-PCIEERD, DOST-PES, DOST-PHIVOLCS, DOST-SEI, and each cluster of the DOST Regional Offices (North Luzon, South Luzon, Visayas, and Mindanao clusters). Each DOST agency and Regional Office was asked to send the names (primary and alternate) of their representatives that will serve as members of the team.

The Task Group shall convene, organize itself to identify other possible members necessary for the purpose, and prepare an action plan and timetable for the creation of the Agenda. The Science Communication Agenda shall provide an efficient and effective system for the production, exchange, and dissemination of Science, Technology, and Innovation (STI) information towards an improved overall Filipino awareness and appreciation of STI. The Agenda shall include, among others, the DOST's science communication objectives, priorities, and roadmap.

SIGNIFICANT CONTRIBUTIONS OF THE AGENCIES

Science communication has become part and parcel of all the DOST agencies' and the Regional Offices' efforts. This is reflected in a rich harvest of initiatives to constantly communicate science to the people.

I. DOST-PCHRD

- **Talakayang Health Research and Technology (HeaRT) Beat:** In 2019, the DOST-PCHRD launched its first Talakayang HeaRT (Health Research and Technology) Beat (THB), a media and press conference to disseminate and promote the Council's initiatives, programs, advocacy, and partnerships to the media and key stakeholders. To date, the Council has been able to conduct 20 THB sessions. Through this initiative, the Council was able to increase its mileage in various media platforms, especially in online news, radio broadcasts, and television. Research personalities and project proponents were able to interact with different members of the media to advance the cause of health research in the country.

- **DOST-PCHRD Facebook and Twitter Pages:** As part of its research information dissemination channels since 2015, the DOST-PCHRD shares the latest updates on its supported projects and health research activities through social media. Through its presence on Facebook and Twitter, the Council can provide up-to-date and accurate information to every Filipino. To date, the Council has 73,000 page likes on Facebook and 3,054 followers on Twitter. In January 2021, the DOST-PCHRD Facebook page was verified.

- **Making Life Better: A Digital Campaign:** The Council launched the Making Life Better Campaign on March 17, 2022, on social media. The campaign aims to create awareness of the DOST-PCHRD and its role and contribution to the field of health research that positively benefits Filipinos. Three videos and five static materials were produced for this campaign. The results showed that awareness efforts were able to surpass the campaign goal of 8.7M unique

users by 40.52%, with a total of 12.30M unique reaches within the run period. Total video views also exceeded the set goals by 556%, with 2.7M views (Total campaign metrics: 12.30M - Total Campaign Reach; 35.11K - Total Campaign Impressions; 3.03M - Total Campaign Video Views; 56K - Total Post Reactions; 1.3K - Post Shares; 2.3K - Total Link Clicks).

- **Participation in Annual Science and Technology Fairs and National Conferences:** Every year, the DOST-PCHRD participates in various annual science and technology fairs and conferences to showcase its supported programs and projects through exhibits and forums. The Council never misses out on its participation and contribution to the National Science and Technology Week (NSTW), Regional Science and Technology Week (RSTW), National Biotechnology Week (NBW), and National Research and Development Conference (NRDC).

- **Various Webinars and Virtual Pressers:** The role of online platforms became crucial in light of the COVID-19 pandemic. The traditional face-to-face conduct of scientific events was halted because of the fast transmission of the disease. The Council took this opportunity to maximize its social media presence. Thus, conducting webinars and virtual pressers became a strategy.

- **COVID-19 WE CaN Webinar Series:** In partnership with the Ateneo de Manila University Institute of Philippine Culture (AdMU IPC), a two-phase COVID-19 webinar series titled "Sustaining the Conversation on COVID-19: How Do We Cope? The eTURO Webinar Series on Engaging Communities and Networks (WE CaN!!)," was organized to provide evidence-based and expert-led discussion platforms on how local, regional, and national responses can enhance the coping mechanisms of individuals, communities, and networks. A total of 49 webinars were organized and attended by a total of 43,771 participants from March 2020 to March 2021.

- **Town Hall on COVID-19 Vaccine Clinical Trials:** To inform partners of their role in conducting the vaccine clinical trials, specifically the

local government units and healthcare workers, the DOST-PCHRD, in partnership with the Department of Health, conducted a series of town hall meetings on January 29 and February 1-2, 2021. The sessions served as a platform to reiterate the critical importance of following the protocols on-ground, upholding the rights of participants, and ultimately, adhering to scientific standards. The event also served as an opportunity for the partners to raise and address pressing questions on the conduct of clinical trials in the country.

DOST-PCHRD Executive Director Dr. Jaime C. Montoya and Coordinator of Forum for Ethical Research Committee in Asia and Western Pacific Region (FERCAP) Dr. Cristina Torres served as resource persons. Dr. Montoya provided an overview of the conduct of the clinical trials in the country and emphasized the important roles of the health care workers and the LGUs in the successful conduct of the clinical trials. Dr. Torres, on the other hand, tackled the do's and don'ts in conducting clinical trials and discussed the rights of every participant.

- **Town Hall on Dealing with COVID-19 Delta Variant:** A town hall on dealing with the COVID-19 Delta variant was held on August 10, 2021, to inform the DOST Community about the variant of concern, the Delta virus, and what measures can be taken to stay safe and protect family members. This virtual event was an opportunity for the DOST personnel to raise questions and seek clarifications regarding the new strain and the COVID-19 vaccines. A total of 377 DOST employees participated in the Zoom meeting, and the live broadcast on Facebook was able to reach 12,288 Facebook users and 553 engagements.

- **E-Newsletters and Other Publications:** The DOST-PCHRD has an e-newsletter healthresearch.ph which is released quarterly featuring activities of the Council and the HERDINPLUS monthly newspaper, which features research uploaded or available in the HERDIN database.

- **Media Mileage:** As part of its information dissemination activities, the Council monitors its media mileage in print, radio, television, and online media. Below are the data from 2020-2021.

	2020		2021			
	COUNT	PR VALUE (PHP)	COUNT	PR/AD VALUE (PHP)	VIEWERSHIP/ READERSHIP	REACH
PRINT	510	8,169,467	476	10M	252M	183M
ONLINE	2,332	154,084,982	2,564	170M	N/A	1.2B
TV	985	521,467,646	1,029	703M	42M	N/A
RADIO	801	151,430,431	1,103	307M	110M	N/A

II. DOST-PCIEERD

- **Pinoy Science:** In 2016, DOST-PCIEERD's Information Group (IG) leveraged social media for information dissemination campaigns and project promotions. Alongside tri-media, this helped boost the agency's presence among the younger population. The most notable was the Pinoy Science Facebook page, which regularly posts well-conceptualized copy and visuals of featured technologies or projects of DOST-PCIEERD.

- **Science Communication Fellowship Program:** Popularizing Research for the People: The DOST-PCIEERD and the University of the Philippines Los Baños organized a Science Communication Fellowship Program to mentor R&D project personnel in communicating their research results. It is a four-month-long fellowship that will teach participants the concept of science communication, popularization techniques, and skills in developing popularized communication materials.

- **Science Communication R&D for Innovation Program for 2022-2026 Roadmap:** Envisioning integrated, inclusive, and innovative science communication in the Philippines, the roadmap details strategies to improve Science and Communication in Human

Resources, R&D Technology, Facilities and Services, and S&T Policies. The overall outcome would be the creation of a Science Communication Act, an R&D Center for Science Communication, and more academic programs focused on Science Communication.

III. DOST-PCAARRD

- **Promoting R&D Results Through IEC:** From 2016 to 2022, 397 titles of publication and other printed IEC materials were published by the Council. A total of 850,093 copies of publications were disseminated to 282,169 clients from the Council's regular mailing list and online patrons.

- **Reaching Out and Providing Access to AANR Resources Through the DOST-PCAARRD eLibrary:** In 2017, the DOST-PCAARRD approved and funded the DOST-STIl project, "Developing the DOST-PCAARRD Innovation and Technology Center Library," which transformed the Council's traditional library, known as Scientific Literature Services (SLS), into a digital or electronic library by designing and developing the Science Library Integrated Management System (SLIMS). It is now called the DOST-PCAARRD eLibrary. The Council launched it in April 2020 to respond to the people's yearning for information amid health and mobility restrictions. As of December 2021, the DOST-PCAARRD eLibrary has 11,239 registered patrons who have downloaded 21,761 publications from its 8,260 library collection. From the initial project, the Council funded other initiatives to further improve the system and widen and build the capability of its network and expand the number of library resources.

- **Valuing DOST-PCAARRD's Public and Media Relations:** Enhancing its public and media relations (PMR) initiatives, the Council produced and disseminated 1,085 articles from 2016 to 2022. This activity yielded more than PHP 190 million (around USD 3.8 million) in media value (MV), or the amount that the DOST-PCAARRD would have spent on advertising if it did not practice PMR.

- **Promoting Campaigns through Integrated Marketing Communication:** Addressing the fragmented and overlapping nature of its communication messaging, promotion, and advocacy initiatives, the DOST-PCAARRD adopted the Integrated Marketing Communication (IMC) approach framework. Through the design and conduct of communication campaigns, it aimed to consolidate its communication efforts guided by a common brand and messaging pillars.

- **Flavors of Science**: This campaign aims to communicate the science behind food production through celebrity and online influencers. For its initial offering, the Council partnered with celebrity chef and entrepreneur Marvin Agustin, who is present on Facebook, Instagram, TikTok, and YouTube. During the engagement, Marvin visited farms or institutions where DOST-PCAARRD-funded R&D results were showcased. He would be part of the DOST-PCAARRD's videos in the form of vlogs featuring recipes using native food ingredients, which are products of AANR R&D; trivia about the featured commodity and native food products; and other interesting agricultural science information.

- **Lakbay GALING:** This campaign, anchored on a YouTube Series, banners the accomplishments of the Council's GALING-PCAARRD program. GALING means "Good Agri-aqua Livelihood Initiatives towards National Goals." Lakbay GALING captures the different S&T initiatives and outputs of the program accented by the scenic spots, culture, and facts about the featured locality.

- **Saribuhay:** It is also a Filipino term for biodiversity. The Saribuhay YouTube series is a science communication campaign to boost the viewers' awareness of the DOST-PCAARRD's initiatives in terrestrial flora (plants, including bacteria and fungi) and fauna (animals), marine, indigenous plants, and native animal biodiversity. Through this campaign, recognized as an innovative science communication platform to promote R&D, the Council's Biodiversity S&T Program was included in the DOST's Big 21 in 2021, featuring high-impact programs and innovative S&T projects.

- **Promoting R&D Results through Participation in National S&T Events and Exhibits:** Throughout the six years, the Council consistently organized or participated in events and exhibits by producing audiovisual and promotional materials and showcasing live specimens and samples. It also developed a virtual exhibit platform to bring technologies to its clients and stakeholders during the annual National Science & Technology Week (NSTW), Regional Science & Technology Week (RSTW), and SyenSaya: the Los Baños Science Festival.

- **Increasing its Social Media Presence:** The DOST-PCAARRD's information dissemination via social media included conducting webinars, virtual press conferences, and relevant and timely posts, which significantly increased the Council's following on its Facebook page. Initiatives in improving the social media presence of the Council started in 2016 when the page only had 4,307 total likes. It grew by an average of 7,400 likes per year until 2019. On July 30, 2019, per AO No. 195-A, the Council's Social Media Team was formed and tasked to increase community engagement and timely content. With the continuous release of informative content, such as easy-to-follow instructional materials during the COVID-19 pandemic, the total likes in December 2020 recorded a more than 100% increase at 68,455. This was a huge jump from the December 2019 likes, which were only 33,654. With more virtual events and engaging content, the Council's Facebook following reached its 100,000 mark in May 2022.

- **Providing for a Technology Transfer and Promotion Platform:** Since 2011, the DOST-PCAARRD Regional Consortia have been spearheading the FIESTA or Farms and Industry Encounters through the Science and Technology Agenda. From 2011 to 2018, the goal of the FIESTA was to create technology awareness by holding a festive celebration that included exhibits, a farmer's forum, and the Technology to People (T2P) media conference. In 2019, to encourage efficiency, promote more technologies, maximize the funds allocated, and reach a bigger audience, the traditional and single Consortium-led FIESTAs were converted to Cluster FIESTAs, wherein multiple

Consortia organized a joint event on single or multiple commodities. Going beyond awareness, FIESTA was transformed into a modality that catalyzes technology transfer through a technology pitching session. From 2016 to the present, a total of 32 FIESTAs have been conducted. In 2019, three Cluster FIESTAs were conducted. The Halal Goat FIESTA, jointly conducted by CAARRDEC, SMAARRDEC, CLAARRDEC, ILAARRDEC, and CVAARRD, produced two term sheets signed for the possible commercialization of chevon recipes in pouches by the DMMMSU and the pellet feeds by CLSU. The Cluster FIESTA on sweetpotato was a collaboration among ViCARP, CLAARRDEC, and BCAARRD, while the Cluster FIESTA on biofertilizers and biopesticides was implemented by NOMCAARRD, CCAARD, ILAARRDEC, SMAARRDEC, and CVAARDEC. Due to the pandemic, the Council proposed to conduct FIESTAs virtually. So far, two Virtual Cluster FIESTAs have been conducted: Mango FIESTA in December 2021 and Native Chicken FIESTA in April 2022. The Virtual Cluster FIESTA on mango resulted in two licensing agreements between an investor and a technology developer from the University of Southeastern Philippines. Meanwhile, the Virtual Cluster FIESTA on native chicken enticed eight investors to produce Dara native chickens commercially.

IV. DOST-ASTI

- **COARE E-Newsletters:** DOST-ASTI's Computing and Archiving Research Environment (COARE) facility provides a platform for easy storage, analysis, and sharing of scientific data. The Data Archiving service is composed of a highly available repository that can accommodate various storage requirements of COARE users and store data on a short-term or long-term basis. Data generated through these services can serve as input to various discoveries or high-impact research and contribute to scientific-based policy and decision-making. In 2022, COARE started sharing a monthly newsletter. The first volumes focused on women working in high-performance computing (HPC) and advanced networking, while the most recent e-newsletter toured the COARE Research Data Center in Quezon City.

- **Journals and scientific papers:** DOST-ASTI continues to publish studies in international journals and present their findings and projects at international conferences. The 2020 studies include Near-Realtime Flood Detection from Multi-Temporal Sentinel Radar Images Using Artificial Intelligence and Sugarcane Plantation Mapping Using Dynamic Time Warping From Multi-temporal Sentinel-1A Radar Images. In 2018, DOST-ASTI also published studies on the Doppler Tolerant Modified P4 Code (DTMP4 code) for Pulse Compression Radar and A Convolutional Neural Network Approach for Estimating Tropical Cyclone Intensity Using Satellite-Based Infrared Images.

- **Content creation:** #BookReviewbyTED is a series of blog posts by Engr. Ted Peñas II, a current S&T fellow of DOST-ASTI. He has reviewed Deep Work by Cal Newport, which he expresses is "made for those who need to maximize their potential in creating valuable work that has intellectual depth and impeccable arguments." It dives into the ability to focus without distraction, even on the most cognitively demanding tasks, a much-needed skill to quickly embrace complex information in less time. He also reviewed A Mind for Numbers: How to Excel in Math and Science (Even If You Flunked Algebra) by Barbara Oakley, Ph.D., who narrates how she discovered and experimented with acquiring mathematical and technological skills to overcome challenges, adding insights from neuroscience and cognitive psychology to study math and science effectively. In both book reviews, Engr. Peñas relates the books to his personal experiences and always ends by highlighting the book's key takeaways and the valuable lessons for self-improvement.

- **Contribution to NetMesh project:** In 2018, the National Telecommunications Commission (NTC) approached the DOST-ASTI to help them develop their own tool and system for measuring internet speeds nationwide. NTC and DOST-ASTI embarked on the Fixed and Mobile Benchmarking System Project, which came to be known as NetMesh. DOST-ASTI Director Franz de Leon said, "Unlike readily downloadable speed test applications, a locally developed software like NetMesh would integrate functionalities

targeted to get internet performance and quality data at a specific time and place, down to the barangay level." He added, "The data on Internet performance and quality generated from these tools will be significant for NTC not just in coming up with relevant policies, but in encouraging our telcos and ISPs to reach areas where Internet connectivity is slow or lacking."

V. DOST-FNRI

- **Regular information dissemination activities to fight malnutrition:** These included the DOST-FNRI Virtual FNRI Seminar Series, the DOST Multi-Media Nutrition Promotion, IEC packages, Virtual National Science & Technology Week (NSTW), Virtual Nutrition Communication Network (NUTRICOMNET), Nutrition Research Information Network (NUTRINET), among others.

- **iFNRI website:** Over six years, the iFNRI website has had more than four million users. In 2021, the implementation of the iFNRI portal was sustained, where visitors can access updated versions of the Philippine Food Composition Table, Menu Evaluation, Online Nutrition Counseling, Food Consumption Database, and laboratory services and training.

- **iTRAIN website:** Enhanced in 2021, the website uses Zoom for webinars and training where the Continuing Professional Development (CPD) units can be automatically generated. iTrain aims to partner with state colleges and universities to allow participants to earn units for courses like food technology, nutrition, and dietetics.

- **Information, Education, Communication (IEC Packages) and Other Innovative Strategies by Creative Publication Unit of Knowledge Diffusion Section (KDS-TDSTSD):** The KDS-TDSTSD of the DOST-FNRI develops materials that include DOST-FNRI's Annual Report, the FNRI Digest, the Online Book of Abstracts and Souvenir Program, Menu Guide Calendar, Nutrition Desk Calendar, and Masang Pinoy TVs (MTVs). The newly developed materials for 2021 were online games such as Nutrition Snakes and

Ladders and the Nutrition Maze, an activity book, and four eKusina videos from the 2021 Menu Guide Calendar recipes.

- **Developing and Pre-testing of Nutrition Cartoons Video to Promote Healthy Eating among Hearing and Deaf and Mute Children:** A manuscript of the same title was submitted to the Malaysian Journal of Nutrition. The study described the development process of the nutrition cartoon video and discussed the research participants' acceptance of the video.

- **2020 National Nutrition Survey (NNS) Online Training:** The ENNS Online Training supplemented face-to-face learning and prepared the trainees in conducting the ENNS. Modules for the survey components were made electronically available, along with evaluations that can be easily accessed by the participants regardless of time and location.

- **Strategic Communication Plan:** Social media and mainstream media were harnessed to market and promote FNRI initiatives. The BIG One Campaign involved posting a series of carefully timed and thematic art cards and media releases to generate public awareness of the importance of DOST-FNRI's programs and projects.

- **Nutrition Research Information Network (NUTRINET):** Formed by linking various libraries and documentation sections of information centers, NUTRINET is a specialized information system covering food, nutrition, and related fields. It aims to achieve an efficient flow of information required by the nutrition and nutrition-related R&D programs or projects of its members and the country's scientific community. The Adopt a Library (NUTRINET-AAL) project assists in the collection development of public colleges and university libraries in need of additional references in Food and Nutrition related courses. The Cavite State University and the University of Rizal-Tanay Campus are one of the beneficiaries of the NUTRINET-AAL project.

- **Food and Nutrition Information Resource Station (FIRSt) Virtual Book Exhibit:** In 2022, the DOST-FNRI's FIRSt joined in celebrating the 32nd Library and Information Services Month with the theme "Mga Aklatan Bilang Kanlungan ng Karunungan: Tagapangalaga ng Kultura at Pamanang Lokal." The FIRSt Virtual Book Exhibit gives the public e-book access to major DOST-FNRI publications on food and nutrition R&D.

The DOST-FNRI communicates its meal planning guide through low-cost but nutritious recipes through accessible channels. In a segment of "Kain Na" on PTV4, DOST Secretary Fortunato T. de la Peña joined Cabinet Secretary Karlo Nograles and Chef Rob Pengson in cooking a DOST-FNRI recipe, pork humba with okra.

VI. DOST-FPRDI

- **Digitization of Wood Samples:** DOST-FPRDI's Herbarium and Xylarium (Wood Library) houses a complete collection of woods in the Philippines, with around 20,000 samples, more than 4,000 tree species, and about 108 contributing countries. To preserve the collection, DOST-FPRDI experts began digitizing each sample, capturing 20x high-resolution images using a digital microscope. The information and photos are uploaded, and a QR code is assigned to each specimen for indexing, which the public can access using a smartphone.

- **Wood ID Mobile App:** Wood identification will soon be possible with a mobile app developed by DOST-FPRDI and DENR-Forest Management Bureau. The joint agency project can quickly and accurately identify selected species, informing users on whether lumber is legally sourced. The Android app can also be used offline.

- **Teknolokal Webinar:** In 2020, DOST-FNRI-developed technologies were pitched to Overseas Filipino Workers (OFWs) through DOST's TeknoLokal para sa Makabagong Bayani webinar series. The series details innovations, investment costs, and returns that could empower OFWs to establish their technology enterprise. The project is part of DOST's iFWD PH Program (Innovations for Filipinos Working Distantly from the Philippines).

- **Continuing Professional Development (CPD):** CPD training courses are offered for free to licensed foresters on non-wood forest products preservation and treatment and basic finishing techniques.

VII. DOST-ITDI

- **Business Guide on Natural.green Tech (2017):** A guide featuring 27 market-ready technologies that use green engineering. Utilizing raw materials described as naturally occurring and commonly found in the Philippines, preventing waste, and ensuring that all material and energy inputs and outputs are inherently safe, the green technologies comprise 12 innovations in food processing, six health and wellness, six green engineering, and four nanotechnologies. These include nutritious ready-to-eat food packaged in retort pouches, anti-diabetes supplements from plants, a safer and natural food colorant, and a sugar alternative made from nipa sap. The compendium describes each technology and its marketability, providing the reader with a complete understanding of its potential as an investment opportunity.

- **Teknegoshow:** In 2020, the Institute implemented the "DOST-ITDI Strategic Communication Portfolio for Enhanced Technology Promotion and Transfer," funded by DOST-GIA and monitored by DOST-PCIEERD. Through this project, DOST-ITDI piloted

an off-the-cuff business-type talk show titled "DOST-ITDI'S TekNegoShow" or TNS, a first within the DOST system. It aired on the digital platform from October 2020 until the third week of January 2021 with 14 episodes. The TekNegoShow: TekFlix Livelihood Series includes topics on technology transfer, virgin coconut oil, ready-to-eat foods, and food safety, *taho* (soft tofu snack) processing, *tablea* (molded nibs of cacao beans) processing, packaging technology services, ginger processing, mungbean-coconut drink, isotonic drink, reference materials, hand sanitizer and alcohol making, and emergency food reserve. The TekNegoShow also produced six episodes under its special edition series on DOST-ITDI-developed technologies featuring AMCen-MATDEV, Modular Multi-Industry Innovation Center, i-SALT, Abaca Fiber Reinforced Composite, Nanoclay Technologies, and Biodegradable Plastics.

- **TekPinoybiz:** In 2020, DOST-ITDI re-launched its livelihood technology videos online through YouTube, Facebook, and print as an intervention for displaced workers locally and abroad. Known as TekPinoybiz, the channel is a source for income-generating ventures, including home-based ideas. To complement, 77 technology posters, with some in a 'how-to' format, were posted on DOST-ITDI's Facebook.

- **Virology Institute of the Philippines Webinar Series:** The Virology and Vaccine Institute of the Philippines (VIP), a proposed facility of the DOST, hosted webinars via Zoom and were streamed live on DOST-ITDI's Facebook page and YouTube. Twenty-one webinars were presented by Balik Scientists leading the establishment of the VIP. Each Balik Scientist discussed topics from their field of expertise, including Dr. Myra Hosmillo from the University of Cambridge on Bioethics on the Use of Animals for Research and on the COVID-19 Omicron Variant; Dr. Elpidio Cesar Nadala, Jr. from the Diagnostics for the Real World Ltd. on the Guidelines for Research Involving Recombinant and Synthetic Nucleic Acid Molecules and another on Biosafety and Biosecurity; Dr. Lourdes Nadala on the Proper Handling of Multi-Drug Resistant Bacteria, on the Handling of Novel and Dangerous Pathogens, and Immunoassays;

and Dr. Christina Leyson from the U.S. Department of Agriculture Agricultural Research Service on Molecular Virology, Genome Sequencing and Bioinformatics.

- **Brand Awareness:** DOST-ITDI's brand, "Inspired by Technology, Driven by Innovation," aims to create a distinct identity for what it does and what moves it forward. Great strides in its information awareness campaigns started in 2016 with the publication of 192 press releases and the conduct of 13 Radio-TV guestings. It has since established a strong quad media presence. In 2021, it syndicated 181 press releases and published 470. Radio-TV guestings, interviews, and instances of live coverage totaled 254. The reach of its Information, Education, and Communication or IEC materials and postings on various social media platforms totaled 2.6 million. As an increasing number of national broadsheets and cyber media publish news releases about DOST-ITDI programs and projects, these serve as constant reminders. The goal of these campaigns is for DOST-ITDI to remain the most iconic representative symbol of research in the DOST. The Institute hopes to equate, in many people's minds, science research with DOST-ITDI.

- **Materials Development Laboratory (MATDEV):** MATDEV employs additive manufacturing or AM, also known as 3D printing. Apart from research and development on materials for use in additive manufacturing abled or AMabled products—teaming up with hospitals in the National Capital Region to address the need for improved medical accessories and devices (including nebulizers and face shields)—MATDEV also focused on continuing efforts to build capacity in AM education and research. It established STEM (science, technology, engineering, and mathematics) networks with universities through the program "Strengthening the Technology, Research and Extension on Additive Manufacturing (STREAM)." A series of stakeholders' consultative meetings have been conducted in the cities of Cebu and Baguio and provinces of Bataan and Pampanga.

- **Halal R&D Manuals:** DOST-ITDI supports the Philippines' bid to champion the Halal industry by ensuring the authenticity or

'Halalness' of halal products. It has developed a Halal Assurance System or HAS Manual for processing bananas as chips, catsup, and frozen *saba*. Other HAS Manuals that have been developed include those for processed bakery products (loaf bread and *pan de sal* or bread rolls), such as dried and powdered food ingredients (garlic, onion, black pepper, and chili), dried fruits (mango, pineapple, and coconut) powdered vegetables (carrots and moringa) and root crops *ube* (purple yam), cassava, and sweetpotato), including emulsified meat products like sausages, nuggets, and burgers.

- **Awareness Building for the Circular Economy:** For a long time, small and medium-scale food manufacturers were engaged in a linear economy where they did not account for the side effects generated by the processing of their products. DOST-ITDI is changing that through the Modular Multi-Industry Innovation Center (MMIC) or InnoHub sa Pinas, which develops inputs for the circular economy by repurposing by-products/wastes/surplus produce. Currently, InnoHub sa Pinas services the food processing and nutraceutical (personal care) industries. It has since developed several product prototypes and improved processes. In 2021, Zambo Tropical Foods adopted the technology for dietary fiber production and essential oil processing from *calamansi* (Philippine lemon) fruit wastes.

- **Virtual events:** Thirty-four virtual events were produced where DOST-ITDI participated, facilitated, conducted, or documented the activity. This included 13 webinars, the VIP-Balik Scientists' courtesy call to the DOST Secretary, 15 sessions of the VIP webinar series, fora with various stakeholders, Halal webinar series, technology pitching/offerings, FGDs, and the "Pagtatasa sa TeknoNegoShow."

The DOST launched the country's first innovation hub. The Modular Multi-Industry Innovation Center (MMIC), or "InnoHub sa Pinas," uses advanced equipment to serve micro, small, and medium enterprises (MSMEs).

VIII. DOST-MIRDC

- **The Technology Diffusion Division - Technology Information and Promotion Section (TDD-TIPS):** The TDD-TIPS is responsible for the agency's production of Information, Education, and Communication (IEC) materials. The TIPS was heavily involved with coordinating with various project teams to complete the Philippine Metals (Phil Metals), which highlighted the technical papers authored by the DOST-MIRDC's very own engineers and support personnel. In addition, the TIPS produced flyers and brochures specifically for technologies featured in science fairs and exhibits and for facilities to be launched to the public. The TIPS monitors and ensures that the media report stories about the Center's technologies and services.

- **Online Forums, Webinars and Training:** As part of its mandate, the DOST-MIRDC engages relevant exchange of information through a series of webinars and training. The Center offers training to professionals and future engineers and has also developed webinars and forums on technology transfer and skills upgrading. The Center partners with subject matter experts from both local and abroad.

- **Online MIRDC Databases - Planning and Management Division - Management Information System (PMD-MIS):** The Metalworking Industry Database is continuously updated to be a database for metalworking companies nationwide according to industry processes: machining, welding, heat treatment, electroplating, metal casting, die and mold, stamping, and forging. This enables the Center to quickly provide information to companies needed for a specific purpose. The PMD-MIS is developed by the Technology Management Information System (TechMIS), a web-based and access-controlled information system that provides a centralized repository of information for DOST-MIRDC developed technologies, intellectual properties, scientific papers, and technology transfer activities, and the Knowledge Resources (K-Resources) System a web-based and access-controlled information system that provides a centralized repository of relevant information but not limited to books, articles, research papers, references, methods, and manuals related to metals.

In 2021, the DOST launched the Additive Manufacturing Center (AMCen) to support the innovation ecosystem. AMCen aims to be at the forefront of technological, industrial, and societal revolution as it engages consultants and universities to enrich learning and to support policies to accelerate the adoption and proliferation of additive manufacturing technologies.

IX. DOST-NRCP

- **Back2Basic:** B2B makes science lessons easy to learn and teach. The methods of lesson presentation, along with the related interactive and hands-on activities, are structured in creative and popular formats using animated videos and infographics. Its episodes provide the most essential knowledge and skills aligned with DepEd MELC or the most essential learning competencies.

- **Basic Research Symposium:** Presents the results of NRCP completed projects and their significance to innovative knowledge, improved industry, good health, low-cost medicine, and the viability of the country's biodiversity.

- **Basic Research Video Documentaries:** Disseminate research-based data/knowledge from the completed NRCP-funded research project and translate research results into documentary videos with real-life "situationers."

- **BURDA for CEST:** Aims to raise awareness and enhance literacy levels of identified Community Empowerment thru Science and Technology (CEST) communities in science, technology, and the arts through various communication forms translated into popular or laymanized, culture-sensitive, gender-responsive, and research-based knowledge products, and will serve as an entry point of the NRCP to the CEST Education and Literacy component.

- **Expert Class:** A platform for advisory or advocacy where science will be used to discuss and explain current issues. NRCP experts will present topics of national interest to the public for further discussion with the hope of achieving greater awareness of science-based recommendations for policy-making. It is one of the online platforms under the NRCP project "Leveraging Basic Research Information Translation for Empowerment in the Regions Program" (BRITER) to enhance science culture in every Filipino.

- **iShare:** A platform for digital storytelling and the presentation of inspiring stories from accomplished researchers. iShare aims to heighten and strengthen the various public's awareness and engagement with NRCP scientists, researchers, and artists and to boost the appreciation and understanding of the country's budding male and female researchers and artists on the sciences and the arts.

- **NRCP Mobile Game Applications:** These games feature NRCP basic research results.

- **Monograph:** Features NRCP basic research studies written in a simplified manner.

- **Policy Brief:** Highlights NRCP research results that address relevant national issues.

- **Regional Basic Research Caravan:** NRCP holds Regional Basic Research Caravan (RBRC) in regions of the country. It showcases breakthroughs of NRCP-funded research and milestone accomplishments in various universities/research development institutes in all regions, hence serving as inspiration/models needed to build future scientists and researchers in the different fields of science.

- **Regional Policy Forum:** This activity solicits from the intended public innovative ideas and opinions that may be useful in improving the research results on hand or developing new methods to come up with the most appropriate research results.

- **Siargao Science Videos:** Experts gathered essential biodiversity evidence from the mangrove forests of Del Carmen, Siargao to support the province's goal to be a Ramsar site, based on the nine set criteria. Their findings revealed the presence of diverse species, including mammals, amphibians, reptiles, insects, flora, marine fishes, birds, and crustaceans. The discovery of new species, the presence of other threatened species (OTS), endemic species, and more were shown in the animated videos. These are also aimed to be used to provide support for Siargao's economic recovery and

rehabilitation through tourism while also promoting biodiversity and mangrove conservation and protection initiatives. A Siargao Science Workbook was also produced as supplemental material for the videos.

- **Flyers on basic research:** Other NRCP materials include flyers on NRCP Projects per the National Integrated Basic Research Agenda (NIBRA).

- **Rediscovering Rizal: A Commemoration of the 125th Martyrdom of the National Hero, Jose Rizal:** A webcast was hosted by the NRCP in 2021 that highlighted the National Hero's contributions to science, the environment, the arts, and the humanities. The DOST's three sectoral councils, PCAARRD, PCHRD, and PCIEERD, held three of the five webinars, while NRCP hosted the other two. The seminars provided a forum for showcasing Jose Rizal's contributions to and legacy in the arts and sciences.

In collaboration with historians, artists, and scientists, the DOST-NRCP facilitated the conceptualization of how to represent the Filipino scientist Jose Rizal. Prof. Jose Manolo Sicat then translated the design into a clay figure. The DOST-MIRDC made the 3D-printed 12.5-foot tall statue, unveiled in the DOST Plaza on December 30, 2021.

X. DOST-PAGASA

- **Nationwide Reach through Social Media:** As a warning agency, PAGASA communicates and reaches out to people and groups of different classes, especially those directly affected by impending inclement weather. With the widespread use and popularity of various online social media platforms, serving as an accessible and convenient source and vehicle of information, the Agency made efforts to conform with the said developments. On December 5, 2016, PAGASA's first live broadcast on Facebook and YouTube was streamed. As of December 2022, PAGASA had a total of 5,295,747 followers on the PAGASA official Facebook account, 6,478,409 followers on Twitter, and 654,818 YouTube subscribers.

XI. DOST-PNRI

- **Atomic Energy Week:** As part of the government's efforts to increase awareness of the beneficial uses of nuclear science and technology, the annual weeklong celebration presents the latest nuclear science and technology innovations. Apart from conferences and exhibits, it has an interactive map that gives a virtual tour of DOST-PNRI's facilities.

- **Nuclear Training and Education:** Through its Nuclear Training Center, face-to-face and online courses are conducted on radioisotope techniques, radiation safety, and nondestructive testing. The DOST-PNRI also held a specialized course in Reactor Engineering in partnership with the Japan Atomic Energy Agency in 2020.

- **Integrating Nuclear S&T in Philippine Universities:** The Institute has partnered with universities that have integrated nuclear-related courses and electives in graduate programs to further nuclear engineering programs in the academe. These include Nuclear Energy subjects at UP and a Nuclear Energy Track at Mapua University.

- **Online Services Portal:** This single take-off point for DOST-PNRI services includes modules for laboratory and regulatory services:

NATALab Online Module, ISS Online Module, RPSS Online Module, NRD Online Application Module, and the ARD Online Appointment Module.

Inaugurated in 2022, the Radiation Research Center (RRC) of the DOST-PNRI is expected to play a key role in developing the Philippines' expertise in radiation research through the training of next-generation researchers and scientists. The RRC will also be valuable in translating results from the laboratory bench to the clinical setting.

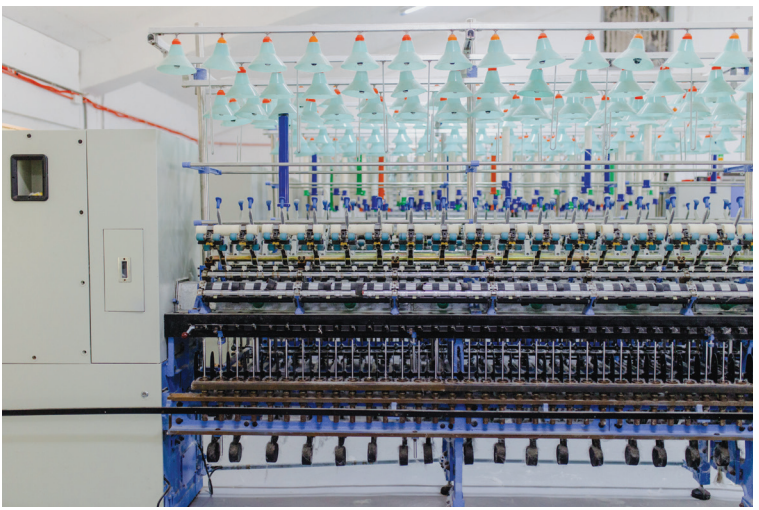
XII. DOST-PTRI

- **Conferences:** DOST-PTRI has been hosting annual Stakeholder Conferences with varying themes each year, like the TELA Nation, ONE ASEAN in 2016, Inclusive Circular Economy in 2018, TELA Vision to promote Philippine Tropical Fabrics (PTF) in 2020, and Fashioning Philippine Textiles in the Now Normal in 2021. Each conference aims to inform key stakeholders, Filipino enterprises, and consumers of the relevance of Philippine textiles as a stimulus for economic development. The DOST-PTRI also pitches new ideas and projects to a roster of different funding agencies from DOST to provide funding opportunities for aspiring innovators in the academe and industry.

- **Regional Yarn Production and Innovation Center website:** The DOST-PTRI launched the Regional Yarn Production and Innovation Center or the RYPIC official website containing relevant information about RYPIC, a database of natural textile fibers sources, handloom weavers, and how one can order natural blended yarns anytime, anywhere, and online. The website features information on products, map locations of DOST-PTRI partners, and their contact details. Information on the natural textile fiber-based yarns in blend with cotton-abaca, cotton-pineapple, 100% pure cotton, and the soon-to-be-developed naturally dyed fabrics can also be viewed on the RYPIC website.

- **TELA Pilipinas:** The TELA Pilipinas, or Textiles Empowering Lives Anew, is an advocacy and brand of the DOST-PTRI to empower the local textile industry by providing S&T interventions. It is also an ecosystem of textile production, from textile fiber processing to product conversion--in the exact location where the natural resources exist and using local skills and talents. TELA Pilipinas connects various stakeholders along the textile supply chain toward the vision of soil-to-skin textile production.

- **Publications:** Dr. Julius L. Leaño, Jr., Chief Science Research Specialist, is a lead author and co-author of a number of DOST-



The year 2019 saw the public opening of the first-ever regional micro-scale yarn-spinning facility, the Regional Yarn Production Center and Innovation Center in Miag-ao, Iloilo, which acts as a sustainable role model for the local communities' utilization of indigenous raw materials. It broadens its communication efforts on learning about natural fibers and textiles with the help of its website.

PTRI published studies. The DOST Intellectual Property Office awarded PTRI the International Publication Award (IPA) as Dr. Leaño garnered seven recognitions for his research from the National Academy of Science and Technology. The Journal Impact Factor (JIF) is a gauge of the quality of papers published. The higher the JIF score, the more prestigious the journals are. The DOST-PTRI had a 35.623 JIF score, the highest among the other 10 DOST agencies.

XIII. DOST-SEI

- **Teacher Trainings for Inclusiveness and Diversity:** DOST-SEI implemented teacher trainings on disaster risk reduction and management (R.A. 10121), including senior citizens (R.A. 9994), persons with disabilities (R.A. 7277), and indigenous people (R.A. 8371). There were 887 participants in the 25 trainings conducted.

- **Development of Science, Technology, Engineering, and Mathematics or STEM Resources to Enhance the Learning Process:** These include 25 storybooks in science and mathematics for children 6-8 years old, STEM modules for elementary and high school students, including RadyoEskwela sa Siyensya (35 radio episodes in science and math) and TuklaSiyensiya sa Eskwela (35 online STEM modules in science and math), coursewares in Science and Math for Grades 1-8 available in Windows and Android (340 lessons), teaching and learning materials in science for Grade 8 using augmented reality technology or the Strategic Intervention Material for Teaching with Augmented Reality or SIMATAR (5 modules) and the development of a 21st-century learning environment classroom—an interactive smart classroom and training facility which provides offline and online learning and training resources in science and math (adopted by 25 schools). Similarly, an undergraduate scholarship reviewer was developed and pilot-tested in 16 schools nationwide.

- **Raising Awareness and Interest in STEM Among Filipino Youth:** DOST-SEI conducted 149 STEM Promotions Programs with 32,312 beneficiaries, including the Climate Science Youth Camp, Science Explorer and NuLab: STEM in Motion and Push4science.

It also recognized 6,712 gifted students in STEM through the Youth Excellence in Science Awards, and conducted 57 national and international STEM competitions with 31,814 beneficiaries. These competitions include the Tagisang Robotics Competition, Imake. Wemake: Create.Innovate.Collaborate, Indie-Siyensya Filmmaking Competition, Philippine Mathematical Olympiad, International Mathematical Olympiad, National Olympiad in Informatics, Science Film Festival and the Philippine Robotics Olympiad.

- **RadyoEskwela and TuklaSiyensya:** DOST-SEI continues to bring science, technology, engineering, and mathematics (STEM) closer to the youth through alternative learning methods and platforms using radio through RadyoEskwela and videos through TuklaSiyensya. In October 2020, RadyoEskwela started airing weekly via Radyo Henyo, a weekly S&T program of DZRH-MBC. Meanwhile, the TuklaSiyensya series was uploaded weekly to the Facebook page of DOST-SEI's Nulab: STEM in Motion. In 2020, RadyoEskwela produced 20 episodes, and TuklaSiyensya produced 15.

- **DOST Courseware:** An original, homegrown production of highly interactive multimedia educational resource packages, DOST Courseware is conceptualized, digitized, and produced by DOST-SEI in partnership with DOST-ASTI and in cooperation with the Department of Education (DepEd), Philippine Normal University (PNU), and University of the Philippines-National Institute for Science and Mathematics Education (UP-NISMED). It is provided for free to schools, available in Windows and Android as a supplemental resource for teachers and students that takes an interactive approach to e-learning and blended learning.

- **Science and Mathematics Technologies Assisting Online Learning:** To assist teachers and learners, DOST-SEI held webinars to disseminate information on DOST Courseware in science and mathematics. Fifty-five thousand six hundred fifty-nine teachers were trained in 452 capacity-building programs.

- **Strategic Intervention Material for Teaching with Augmented Reality (SIMATAR):** Science is communicated with the use of augmented reality technology through DOST-SEI's SIMATAR. Computer-generated images are superimposed on a user's view of the real world to provide a version of reality to simulate digital information. Users may download the applications to view simulations with topics ranging from typhoon formation, earthquakes and faults, comets, meteors, and asteroids, to name a few.

The DOST-SEI currently implements the Filipino Patriot Scholars Project, which regularly engages STEM scholars in activities that include concepts on servant leadership, professional excellence, social responsibility, volunteerism, and disaster risk reduction and management.

XIV. DOST-TAPI

- **TatakPINOYpreneur Campaign:** Launched in November 2021 to promote the DOST-TAPI's Technopreneurship Programs.

- **TechnoBYAHE:** An Orientation Session on the DOST-TAPI's Technopreneurship Programs. An exclusive virtual orientation that provides an overview of the DOST-TAPI's technopreneurship programs geared at students, innovators, researchers, startups, and MSMEs at various stages of their journey towards utilizing technology for business application. A follow-through proposal workshop/writeshop is also conducted to capacitate potential proponents into submitting a proposal for the technopreneurship programs.

- **i-INVENT PH Campaign:** "INVENTouring: Orientation on DOST-TAPI's Funding Opportunities for Pinoy Inventors" is an exclusive webinar that provides a walkthrough on the benefits and mechanics of the different programs of the DOST-TAPI for Pinoy men and women inventors. A follow-through proposal writeshop is conducted to assist qualified proponents.

- **Kalipunan (Kaalaman sa Agham at Lipunan) Newscast**: A newscast that features relevant S&T news and updates as an alternative platform to market the different DOST-TAPI programs and promote men and women inventors, technologies, and innovation movers.

- **Gawad Alunig x Dalumat:** "Empowering Science Stories through Citizen Journalism" is a nationwide science journalism (print and broadcast) contest that aims to capture innovations and inventions happening on the ground and connect them to the appropriate DOST-TAPI programs. Through GAxD, the agency hopes to empower citizens as responsible science advocates and amplify their interest and participation in pushing for a better S&T ecosystem.

- **Towards Attainment of Progress through Innovations (1st Edition) Tanaw:** A compilation of short autobiographies that endeavors to make known the unknown stories of Filipino men and women

inventors and their heartwarming journeys in traversing the path towards inventing and innovating.

- **Kwentong i-INVENT PH:** A series of short films produced to tell stories that are relatable to the general public. Its goal is to empower the culture of ingenuity and creativity among Filipinos, to discover their potential as men and women inventors and reaffirm their abilities, especially during the pandemic.

- **ThinkTalk:** A webinar series showcasing the DOST-TAPI's programs for Filipino men and women inventors as well as Technical Discussions on relevant topics. It aims to bring the Filipino science community closer to the agency and inform them of the assistance they can avail of from the wide array of programs laid out for them. It also aims to feature different topics that are unpopular to the general public, making them more digestible and understandable for them.

- **Corporate Communication Unit (CCU) Campaign: "Makabagong Pilipino" Series:** Inspired by the recently produced institutional jingle of the Technology Application and Promotion Institute of the Department of Science and Technology (DOST-TAPI), "Makabagong Pilipino," the Institute, through its Corporate Communication Unit, pushes for the DOST-TAPI's advocacy. Turning the jingle into a campaign, it features success stories and accomplishments of the Institute's stakeholders in science, technology, and innovation despite the challenging times.

- **Notable Accomplishments of the Institutional Support for Technology Exposition (ISTE) Program:** In 2018, then DOST-TAPI Director Edgar I. Garcia received the gold medals for the Smart Surface and Biotek-M Dengue Aqua Kit technologies from the jury during the 46th International Exhibition of Inventions Geneva on April 11-15, 2018, at the Geneva Palexpo Arena in Geneva, Switzerland.

  In 2019, ISTE won the Best Booth award during the Philippine Business Conference and Expo 2019 (awarded by PCCI).

Within the last three years, the project was also able to produce the following:

1. Copyright Registration and Deposit for National Science and Technology Logo;
2. Copyright Registration and Deposit for Science for the People Logo; and
3. Copyright Registration and Deposit for the 16th National Biotechnology Week Virtual Platform.

The ISTE Program was able to contribute to the growing culture of science and technology throughout the country. Not only did it showcase the DOST's latest technologies and inventions, but it was also able to market the products and make them beneficial to the public. By bringing the technologies to a global audience, it realizes the potential of every Filipino invention to dominate the international scene.

In 2020, the first virtual platform for the National Science and Technology Week (NSTW) and the National Biotechnology Week was spearheaded by the DOST-TAPI.

In 2021, the first Regional Invention Contest and Exhibit (RICE) was held virtually. Furthermore, the exhibits that the program has been organizing inculcate science and technology awareness in students from different parts of the country. Its flagship programs, such as the National Science and Technology Week and Regional Science and Technology Week, spark interest among the youth to discover their potential in various fields of science and technology.


GAWAD ALUNIG x DALUMAT
Empowering Science Stories through Citizen Journalism
-INVENT PH
SCIENCE TODAY
GAWAD
ALUNIG x
DALUMAT


-INVENT PH
INVENTION IDEATION,
PROTECTION, AND
COMMERCIALIZATION
REGISTER NOW!
DOST-TAPI's Funding Opportunities
for Pinoy Inventors
March 29 and 31 | 10:00 AM
SAVE THE DATE!

Top: Apart from innovations and inventions, the contest put out the search for regional discoveries and creative enterprises, around which the themes of youth initiatives and community empowerment shined. While the i-INVENT PH Campaign webinars are bounded across the digital archipelago, drawing the interests of academic and research institutions and juridical persons nationwide.

Bottom: Fittingly, the first Kalipunan newscast episode was about the Gawad Alunig x Dalumat contest and the tilt to science journalism.

Jeremy de Leon is the founder and CEO of JereMake, a company funded by the DOST-TAPI's Invention-Based Enterprise Development Program. His invention was the Make-roscope, a single-lens microscope designed for smart phones.

Arnold Janssen Gallardo was dubbed the DOST-TAPI's Science Youth Fest Ambassador in 2021. Such fests, Arnold said, "enable student leaders to learn more, be updated, and be engaged in relevant topics concerning science and technology."

WORKING WITH THE REGIONAL OFFICES

The regional offices are instrumental in making sure R&D programs reach all parts of the Philippines, as well as involve the necessary stakeholders on the ground. In so doing, science, technology, and innovation are promoted, and the intrinsic benefits that will make a difference in the lives of Filipinos are communicated directly to various audiences and stakeholders. These include the following implementations and sustaining activities:

1. SETUP (Small Enterprise Technology Upgrading Program) has created a high level of awareness among MSMEs towards the realization that technology has a critical impact on their operations and that it can pave the way for better profitability through improved productivity and lower production costs, better quality products and processes, as well as the development of new products for the market, among many others. SETUP has cemented the position of the DOST as a critical institution and one of the most preferred partners of MSMEs in their development and growth. In 2021, the DOST Regional Offices implemented SETUP geared to the next level, called SETUP 4.0, to bridge the gap and drive the economy into full swing. SETUP 4.0 program aims to transform our MSMEs into smart MSMEs through these SMARTER Strategic Themes. The first four are Industry-Level, while the remaining three are Enterprise-Level Strategic Themes. SMARTER is an acronym that stands for Sustainable Economy, Market Competence, Able Human Capital, Responsive S&T Support Infrastructure, Technology and Innovation, Enterprise Support, and, finally, Resiliency and Continuity.

2. The continuous and vigorous implementation of programs and projects in the regions such as iSTART (Innovation Science and Technology for Accelerating Regional Technology-Based Development), GRIND (Grassroots Innovation for Inclusive Development), TECHNiCOM (Technology Innovation for Commercialization), KIST (Knowledge Innovation Science and Technology) Parks, TransDi (Transforming R&D Outputs into Innovations through Technopreneurship and

Customer Validation), CEST (Community Empowerment thru Science and Technology), FWD PH (Innovations for Filipinos Working Distantly from the Philippines), OneLab, FIC (Food Innovation Center), Smart Communities & Cities, and TBIs (Technology Business Incubators). This is to ensure the presence and inform the stakeholders in the countryside of the critical services that the DOST offers to serve the citizenry.

3. The DOST ROs (Regional Offices) and PSTOs (Provincial Science and Technology Office) are the prime movers of the Science for Change Program (S4CP) in the regions where a significant number of SUCs/HEIs (State Universities and Colleges/Higher Educational Institutions), RDIs (Research Development Institutes) and even other NGAs (National Government Agencies) have been engaged as part of the rollout of the program. A series of various activities (face-to-face and virtual) was conducted to promote the S4CP, conduct R&D ideation with private sector partners and consultation meetings to generate quality proposals, push for the establishment of the NICERs and the deployment of RD Leaders, and hold webinars, symposia, pressers, and summits to highlight the key accomplishments of the S4CP to drum up the interest of the public on STI.

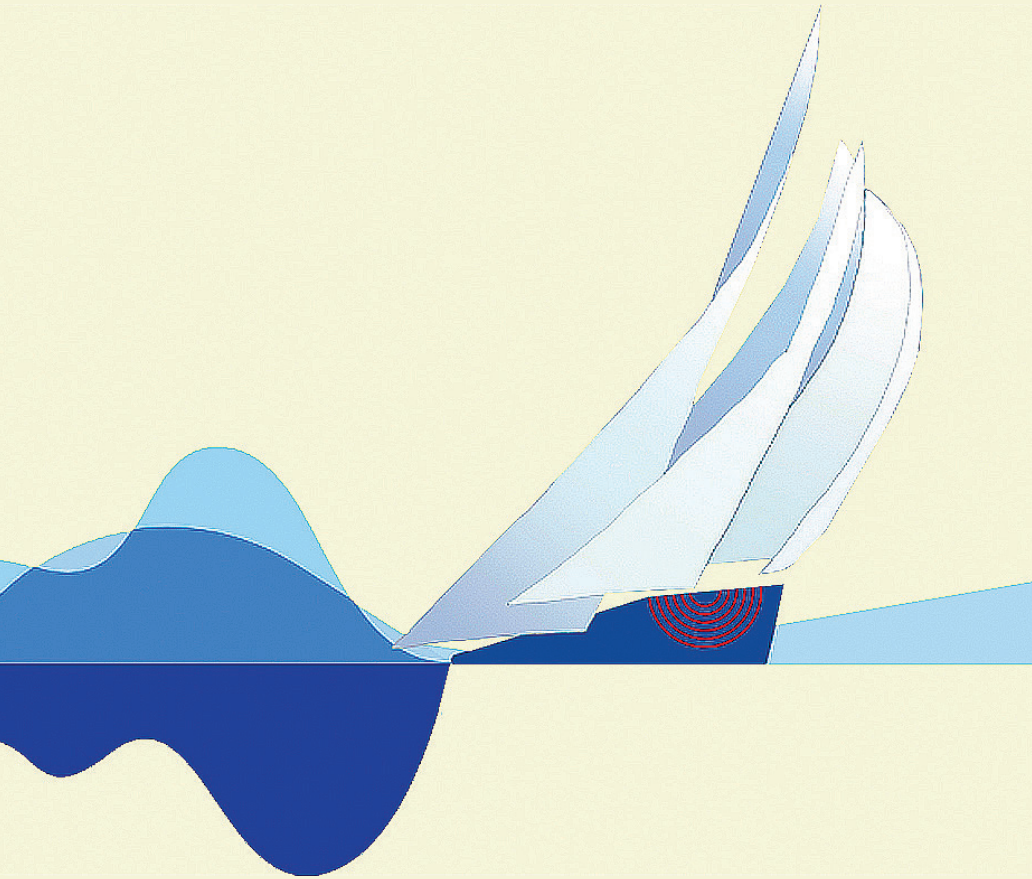
4. The creation of the RRDIC (Regional Research Development and Innovation Committee) as a special committee under the DC (Development Council) across regions provides the opportunity to push for the STI agenda in the RDP (Research & Development Personnel) and encourage/solicit the support and participation, as well as increase the awareness of, the member agencies on developments/initiatives and efforts on STI in both regional and national levels. The RRDIC and RDC resolutions supporting various STI initiatives also contributed to increasing the awareness of the institutions and agencies on the STI agenda (for both R&D and non-R&D).

5. Direct involvement of the ROs and PSTOs on technology promotion, transfer/commercialization initiatives of the DOST to include the facilitation of IP applications such as via SciTech Superhighway Program, among others. Conducting technology fora, pitching and

matching activities, and facilitating the issuance of Fairness Opinion Reports and Written Recommendations all helped in increasing the awareness of the public on STI.

6. Local initiatives of ROs and PSTOs to promote ST and STI-related initiatives through IECs and various online platforms to include Lakas ng Siyensya, and social media pages, to name a few.

7. Engagement with business organizations and local chambers.



CHAPTER SEVEN

PLANNING FOR THE FUTURE

As the last stages of the Science Communication Agenda are established, nurturing a nation entails equipping DOST communicators.

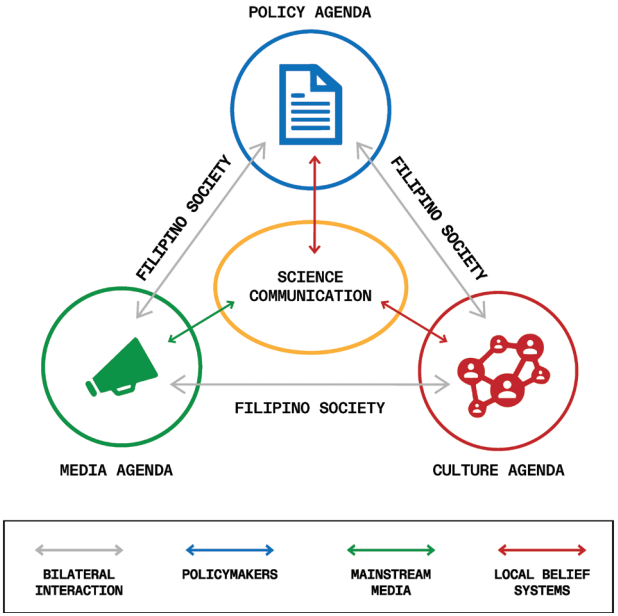
> "If you think in terms of a year, plant a seed; if in terms of ten years, plant trees; if in terms of 100 years, teach the people."
>
> — Confucius

Under DOST Special Order No. 0088 on the "Creation of Task Group to Craft DOST's Science Communication Agenda," to unify and harmonize the science communication initiatives across the country, the Task Group chaired by the DOST-STII Director with members from the DOST-NRCP, DOST-PCAARRD, DOST-PCHRD, DOST-PCIEERD, DOST-PES, DOST-PHIVOLCS, DOST-SEI and representatives from each cluster of the regional offices (North Luzon, South Luzon, Visayas, and Mindanao) was entrusted with preparing science communication objectives, priorities, and a roadmap.

A FRAMEWORK FOR SCIENCE COMMUNICATION

Informed by the government's long-term plans for the overall development of the nation, the Task Group focused on an agenda that would address the three main sectors of society, namely: Policy, Culture, and Media, to help improve and expand the reach of Science Communication.

The framework visualizes the relationships between policy, media, and culture in Filipino society—particularly how science, society, and the media all influence each other. Filipino collective culture shapes beliefs on science and vice versa. At the same time, the media's (re-)presentation of science through its reports in tri-media may reflect society's understanding of science, or it could shape that understanding.



Conceptual Framework for a Science Communication Agenda.

As such, the framework contains three main agendas:

1. The Policy Agenda provides interventions to enhance the appreciation and support of policymakers/stakeholders to STI and to improve coordination between policymakers and scientists at the local and national levels.
2. The Media Agenda centers on encouraging mainstream media to be part of the DOST-STII media network. The members of this media network will be tasked to translate scientific information into popular and holistic formats that are responsive to both cultural and gender perspectives.
3. The Culture Agenda, on the other hand, aligns Science Communication with the local belief system through various strategies, namely: (1) Science advocacy activities, (2) Integration of science communication in the secondary and tertiary curriculum, (3) STI presentation with community members and local government officials as participants.

In doing so, the Science Communication Agenda focuses on the following stakeholders:

1. General Public: members of academic institutions, individuals, non-governmental organizations (NGOs), scientists, higher education institutions (HEIs), micro, small and medium enterprises (MSMEs), and industries.
2. Media Communicators: members of mainstream media, individual communicators, content creators, media practitioners, professional journalists/communicators, and individuals.
3. Branches of Government: executive, legislative, and judiciary.

At the outset, the task group identified various challenges when it comes to developing Science Communication in the nation, namely:

1. Lack of S&T appreciation among policymakers.
2. Mismatch between research and technologies on the one hand, and existing and pressing societal problems or needs on the other.
3. Difficulty in translating technical terms to layman's language.
4. Lack of understanding of technical S&T issues surrounding the S&T ecosystem.
5. Insufficient funding for S&T activities, including S&T communications.
6. Though a survey showed that while most Filipino scientists and academics strongly agree that they have a responsibility to communicate with the public, only 10% of their time was devoted to this.
7. Negative public/audience perception of STI information.
8. Social characteristics and statistics of the audience serve as barriers to STI information, communication, and dissemination.
9. Social characteristics and statistics of the audience serve as barriers.
10. Lack of Science Communicators across the DOST system and the provincial S&T centers.

However, all of these can be turned into opportunities, which include:

1. Establishing the relevance of S&T in order to promote evidence-based policymaking.
2. Boosting demand for evidence of S&T interventions towards solving pressing societal problems.
3. Stimulating application of S&T interventions to address societal needs.
4. Increasing funding for S&T and R&D activities.
5. Enhancing S&T representation in key policy-making bodies.
6. Requiring new formats and modes of communication, as the number of actors involved in science communication increases.
7. Changing mindsets through organizational support and establishing a community of practice, starting with the scientists themselves.
8. Adapting future efforts to be more inclusive, to lessen the risk of excluding a significant proportion of the population.
9. Developing a new form of public engagement that is more participative and dialogic.

DEFINING AND MEASURING THE DEVELOPMENT GOALS

Drilling down into each of the agendas, the task group identified six Culture Development Goals and their measures of success:

Goal 1: Science and local belief systems integrated into science communication, considering the diversity of cultures, perspectives, attitudes, and practices

For this first goal, the focus is twofold: to promote the appreciation and utilization of science in the growth and development of local and indigenous cultures and to recognize the scientific basis and validity of evidence-based local and indigenous practices.

This goal acknowledges the existence of local belief systems that, though they may or may not be supported by the fundamental laws of science, nevertheless play a role in how communities understand and appropriate science and technology into their daily lives. Local and indigenous communities should be encouraged to move towards scientific and evidence-based practices that are in harmony with their cultural heritage and patrimony.

The DOST specifically focuses on areas of environment, public health, natural hazards, and cultural heritage, bearing in mind inclusivity in the Philippines' diverse cultures. Here, science communication and public engagement are vital to developing inclusive science-based policies and decisions, particularly in Disaster Risk Reduction (DRR) and Climate Change (CC)-related actions.

Moreover, this goal recognizes culture as being in a continuing process of development and not merely grounded in an established and static set of norms that people accept, practice, and unquestionably act upon. Local and indigenous cultures are constantly evolving and should be enriched and preserved through science.

Goal 2: Strengthened science advocacy and science communication as part of the basic education curriculum and as an academic discipline

This second goal recognizes the importance of integrating science communication into formal education, particularly in primary education (K to 12) and higher education (undergraduate and graduate). Students in non-science fields should be trained to appreciate, understand, and use the scientific method in their work. This is particularly true for undergraduate and graduate students in communication fields such as journalism and media studies, whose future professions carry the burden of identifying and debunking false claims in popular and mainstream media.

Goal 3: Scientists engaging in popular science communication and scientific communication

This goal underscores the necessity of science communication skills among scientists and academics. It recognizes the multi- and inter-disciplinary dimensions of science and the academe, with science communication as the fundamental basis for facilitating science-based dialogue between various disciplines as much as to the public at large.

While the practice of communicating scientific findings among scientists will be continuously supported, the DOST also envisions to strongly encourage and motivate scientists to engage in popular science communication as well as to immerse and actively participate in civic engagement. This is to help establish and consolidate their expertise in the public eye, so that media practitioners, policymakers, and other publics see them as trusted authority figures.

Scientists' ability to explain their research can affect or influence the issuance of laws and regulations. Experts can shape public perception of science and change people's lives. However, scientists need to learn the language of their publics, so they can bridge the gap between their worldviews and the publics'.

Succinct and contextualized explanations of research should be a fundamental practice developed by regularly engaging scientists in informal discourses outside their own scientific and academic communities. Scientists and academics should also learn to recognize the diversity of their publics and be able to relate with groups critical to communicating or using science—including the media, policymakers, and non-scientists whose voices are crucial to the decision-making process. Likewise, they can be motivated to share and dialogue directly with the public through social media and other means of direct engagement.

On the other hand, undergraduate and graduate students of the applied sciences should also be required to undertake science communication subjects to be taught by practicing scientists and journalists. Moreover, this

goal emphasizes the need for scientists and academics as well as journalists and media practitioners, to adopt essential science communication skills.

Goal 4: Industry and other institutions engaged in strengthening a local innovation and science communication ecosystem

Science should be communicated to industry stakeholders so as to enable businessmen to invest wisely in research, select and evaluate new technologies, provide proper employee training, and maintain infrastructures needed to increase productivity. Business entities should be able to capacitate their workers so that they will be able to understand and use technology-based processes for efficiency and increased productivity. Likewise, industry stakeholders should be encouraged to undertake their own Research and Development (R&D) activities, innovate their processes, upgrade the quality of their products according to standards, communicate the value of innovation to their sector, promote environment-friendly, and energy-efficient processes that will significantly contribute to the national economy.

Ultimately, industry stakeholders should be made to engage the public in decision-making and inform the latter of the scientific bases of their business decisions.

Goal 5: Advocacy groups and other interested groups engaged in communicating and advocating science

The citizenry is not to be taken here as a homogeneous group, but rather as a dynamic variety of cultures that can be engaged to help communicate science to their own communities as well as to the country at large. This goal recognizes the existence of organized groups that advocate specific concerns such as climate change, the environment, agriculture, energy use, animal welfare, public health, industrial development, innovation, and entrepreneurship, among others. These advocacy groups can be strong partners in communicating the value of science and technology in their discourse with stakeholders and constituents.

This goal recognizes the emergence of, and need for, influencers and spokespersons chosen to be the public face of particular advocacies. Science communication is an invaluable tool for ensuring that such influencers maintain and foster evidence-based patronage of their respective advocacies within relevant localized contexts.

Goal 6: Citizens engaged in communicating and advocating science

The sixth development goal is focused on the citizens or individuals who are engaged in communicating and advocating science by creating independent content and personal advocacies to inform a small community. Although there is no empirical data that can be shown at present, the existence of these individuals can be seen in far-flung communities and other areas where there are limited science information resources. These individuals are perceived to be influential and knowledgeable by their respective communities and may therefore contribute to disinformation if not given the appropriate knowledge interventions. As such, they should also be guided in terms of their knowledge and content so as to avoid misrepresentation or inaccurate information, which may be critical as to how the communities they influence may respond, especially in the realm of disaster risk management.

In the same way, the task group detailed three Policy Development Goals:

Goal 1: Increased appreciation of STI and R&D activities among policymakers

Policymakers play an important role in the STI ecosystem. They provide direction through the policies they create. They make the decisions as to what priorities to undertake. However, only a few really appreciate STI and R&D, in particular. This is manifested in the low budget allocated to the DOST and programs, projects, and activities (PPAs) of the STI sector.

Should policymakers have a better understanding of STI, then the DOST would have no difficulty in securing support for its PPAs.

With this in mind, it is crucial to effectively communicate to them what STI is all about, and how it can become the driver for economic development and change. However, increasing the appreciation of policymakers on STI and R&D can only be realized if we can narrow the gap between them and the science community. Scientists and other STI professionals should be able to convey to them the benefits of research and innovation and how the results and outputs can be used by society.

Improved communication strategies are effective when there is an increase in the following indicators:

- Number of STI communication platforms established
- Number of policymakers engaged
- Number of STI-related bills filed
- Number of policies promoting/integrating S&T interventions to solve societal problems

Moreover, the increased appreciation of policymakers on STI can be gauged when they turn to scientific data and information as bases for crafting policies and legislation for national implementation.

More than ever, the conduct of demand-driven R&D activities, as espoused by policymakers, should be renewed and reinvigorated. With their involvement in the ideation and conceptualization stages, policymakers will be able to better relate to and fully participate in the results of R&D activities. Moreover, this approach ensures that different outputs and activities will be delivered to the intended beneficiaries.

Accordingly, using R&D results as a basis for drafting policies, bills, and other issuances can generate immense advantages and gains economically, politically, and even socially. As such, engagement with policymakers from the different branches of government should be intensified and maximized. As a baseline, a quick survey study to gather information and factors that affect the appreciation and utilization of R&D results in drafting proposed bills and laws among policymakers may be conducted. The gathered information may then be used in designing programs and communication platforms addressing the scenario.

The success rate of this goal will be measured through the following indicators:

- Number of policymakers requesting for the conduct of policy research
- Number of policy research conducted by different DOST agencies based on requests by policymakers
- Number of policies formulated based on results of requested research

Goal 2: Enhanced use of S&T results to address problems in the countryside

When science communication is improved, this will redound to enhanced use of S&T results to address societal problems. Again, scientists and science professionals should reach out to policymakers at the local levels and let them know of the STI programs and results they can avail of or use. This may be in the form of technology that can be adopted to increase productivity or improve the livelihood of the people. This may also come in the form of interventions to address problems like water sanitation, malnutrition, and the like.

It is important to instill in policymakers their gains in supporting STI and how their constituents would benefit from the available STI-based resources at the local level. This can be achieved when there is improved coordination between policymakers and scientists/science professionals locally, which can be gauged by the following indicators:

- Number of engagements with policymakers at the local levels
- Number of S&T-based resolutions formulated at the local levels
- Number of S&T-based programs implemented at the local levels

Goal 3: Policy development anchored on science

A decision informed by science is evidence-based and can therefore result in sound policies that can solve problems and prepare the country, communities, and people for future challenges.

However, this can only be done by communicating science to the policy sector, communicating with and engaging them in constant dialogues, considering them as critical stakeholders in S&T activities, not just as passive audiences on the receiving end but as part of the process, where they are constantly engaged as a distinct group. This can be achieved through the following indicators:

- Number of policymakers consulting with scientists and researchers for policy development
- Number of programs and platforms that allow discussions among policymakers, scientists, and researchers

Finally, the task group identified and detailed four Media Development Goals:

Goal 1: Expand science-related stories coverage by the media

Science communication is divided into two dimensions, the scientific arena, and the public arena. It is perceived that there is a disconnect between these dimensions as scientists communicate scientific knowledge in the scientific arena, where the general public is excluded from the discussions due to their limited understanding, context, and technical knowledge. This dimension limits the discourse within a small sphere of science practitioners and discourages meaningful discussions with the public, which may result in further public alienation and resort to unreliable but understandable sources of information.

Therefore, in order to expand the science-related stories covered by the media, research findings should be accessible to the media and encourage the majority of mainstream media to be invested in communicating science to the public as intermediaries and make a critical mass of scientists engaged in popular science communication through various media platforms.

Goal 2: Increase the coverage of science-related stories through improved access to science-related information for the media

There is a need to expand science communication, particularly in the Media, to reach the various societal strata. The science community should continuously sustain the interests of media practitioners affiliated with national and local media organizations and provide opportunities for them to cover and create interesting and accurate stories to communicate science to the various publics.

Goal 3: Promote inclusive science communication in the media

There is a need to package science communication that is inclusive, gender-sensitive, and addresses language and cultural barriers. Science communication should be contextualized on the recipient's cultural beliefs and the general perspectives to connect. In so doing, there is a need to capacitate the media in contextualizing and calibrating science communication that responds to cultural and gender-inclusive perspectives.

Goal 4: Develop science communication as a sustainable career practice

There is a need to professionalize the practice of science communication by providing opportunities and substantive career growth for practitioners and enabling future science communicators to acquire the skills and content knowledge required for professional practice. Academic institutions and media entities should be engaged in providing these opportunities to enhance the role of the media in social change. This includes upskilling journalists affiliated with local media as well as rural broadcasters who are able to speak the language of their intended audience and are, therefore, most able to communicate science within the context of their audience.

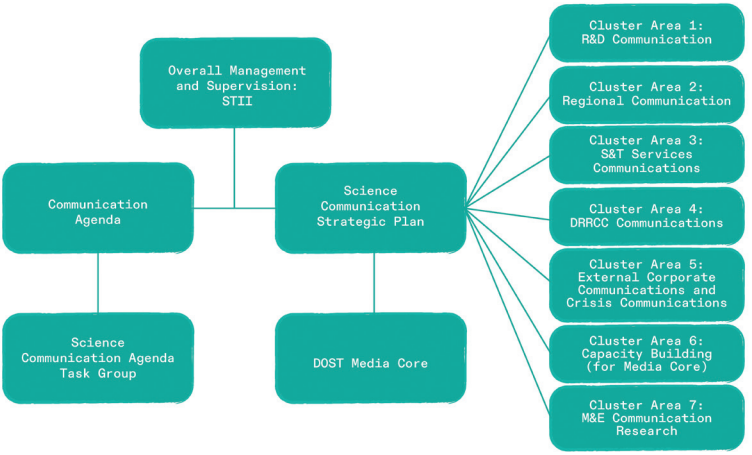
One such endeavor is the collaborative project titled "Science for the People: Towards a Harmonized Science Communication Framework" between the Department of Science and Technology (DOST) and the University of the Philippines Los Baños (UPLB), led by the College of Development Communication (CDC).

Science communication (scicom) practice in the Philippines is rich and diverse but is generally fragmented and undirected. Given this, the DOST and the UPLB CDC, the country's pioneer in scicom scholarship, saw the need for an overarching framework that aims to anchor scicom efforts toward clear, specific, and directed outcomes, supporting the aspiration of the nation. The end goal is to create a harmonized framework that will revitalize strategies to communicate science to the non-expert publics.

THE ROLE OF SCIENCE IN SOCIETY

As a whole, the proposed Science Communication Agenda can serve as the roadmap and foundation for crafting specific strategic science communication programs and projects by the various organizations, networks, and institutions within the DOST system and its stakeholders to enable a participative and dialogic public engagement in science thereby making STI truly in the service of the society. The various sectors and stakeholders mentioned in the Agenda should be made aware of the importance of using accurate and yet appropriate science-based information in decision-making at the individual, social, political, and economic dimensions. The success of the Agenda depends much on how it will be implemented by the stakeholders, in continuously determining the impacts of such interventions, and more importantly, on the support to be provided by the DOST system.

The DOST plays a crucial role in the nexus of Policy, Media, and Society, specifically the creation of a culture of science. To enable the Agenda to work, the DOST needs to harmonize the work of science communication bodies across the archipelago: the DOST Media Core, the Science and Technology Information Institute, the R&D institutes, the agencies in the S&T Service sectors, and the DOST Regional Offices. All should work together in developing, implementing, and monitoring harmonized plans that support the Agenda to communicate science to the various publics.



Conceptual Framework for a Science Communication Agenda.

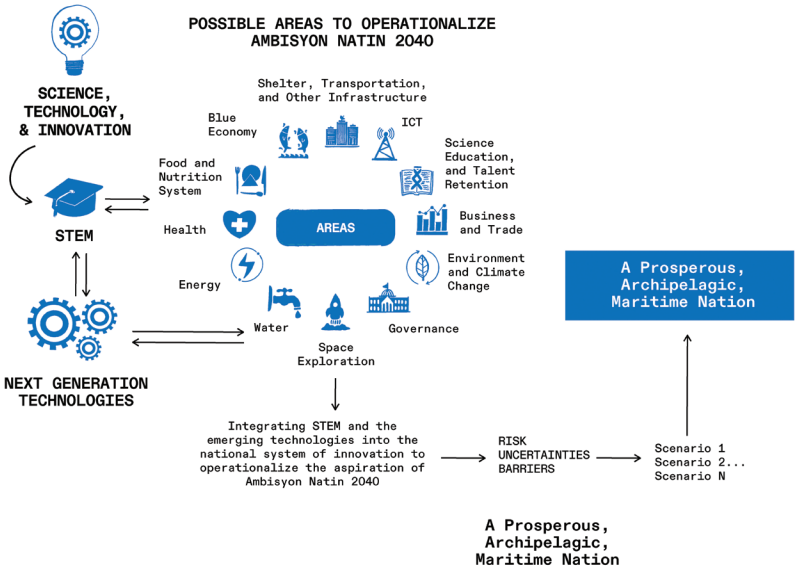
PHILIPPINE DEVELOPMENT AND LANDMARK LAWS TOWARDS BUILDING A CULTURE OF SCIENCE

Early into his administration, President Rodrigo Roa Duterte issued Executive Order No. 5, S.2016, Approving and Adopting the Twenty-Five-Year Long-Term Vision Entitled *AmBisyon Natin 2040* as Guide for Development Planning. A result of various focus group discussions and nationally representative surveys undertaken by the National Economic and Development Authority (NEDA) in early 2016, AmBisyon Natin 2040 represents the collective aspirations of Filipinos to enjoy a *matatag, maginhawa at panatag na buhay* (a stable, comfortable and peaceful life). By 2040, the Philippines shall be a prosperous, predominantly middle-class society where no one is poor; our people live long and healthy lives, are smart and innovative, and live in a high-trust society.

Guided by this vision, the Philippine Development Plan (PDP) was updated (2017-2022), recognizing the need for innovative ways of production, socialization, consumption, and governance in the new normal. Such innovation requires a science, technology, and innovation (STI) ecosystem. Four landmark laws were enacted to help bolster this:

PAGTANAW 2050

ANALYSIS • INTERPRETATION • RISK & POTENTIAL



Conceptual Framework for a Science Communication Agenda

(a) the Philippine Innovation Act (Republic Act No. 11293), signed in 2019, establishes the National Innovation Council (NIC), an interagency and multisectoral committee that effectively elevates policy and planning on STI to the highest levels of government; (b) the Innovative Startup Act (Republic Act No. 11337), signed in 2019, provides incentives, monetary, and operational support to innovative and technology startups to foster an innovative entrepreneurial culture; (c) the Philippine Space Act (Republic Act 11363), signed in 2019, provides the institutional framework to enable the country to reap the benefits from the development and use of space technologies; and (d) the Balik Scientist Act (Republic Act No. 11035), signed in 2018, further encourages Filipino experts, scientists, inventors, and engineers who are currently abroad to share their knowledge and expertise in the country.

The National Academy of Science and Technology (NAST) is the government's primary adviser on matters related to science and technology

and engages in programs and projects that cultivate a productive Filipino science culture. In 2019, the DOST Secretary challenged the agency to develop a foresight study similar to Malaysia's Outlook 2050. Despite the many difficulties brought about by the COVID-19 pandemic, one year after receiving the directive, NAST was able to complete the first and second versions of a 30-year STI Foresight.

In 2021, the NAST launched PAGTANAW 2050, a Philippine-focused STI Foresight and Strategic Plan and compendium of STI megatrends, global and national societal goals, transdisciplinary and interdisciplinary operational areas, and current and emerging technologies relevant to the nation's development that are firmly grounded in the Filipino people's aspirations within the context of the country's natural and physical endowments, as well as shared Filipino values and skills, and other potentials.

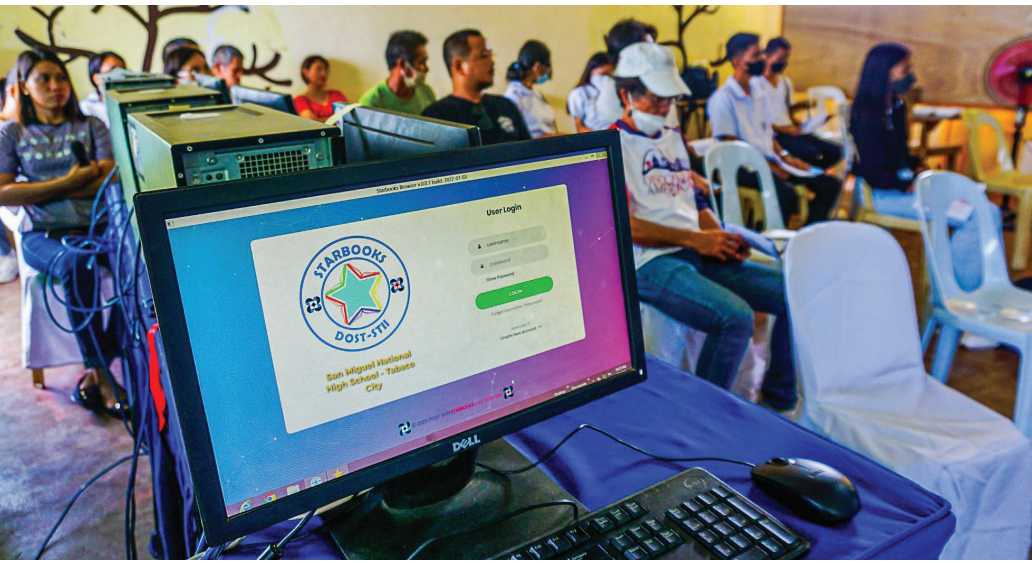
PAGTANAW 2050 also delves into probable and significant drivers of change and provides insights and reflections on the plausible development

paths towards achieving the Filipino aspirations as expressed in the 1987 Philippine Constitution, the various Philippine Development Plans, the United Nations Sustainable Development Goals (SDGs), the Department of Science and Technology Harmonized National Research and Development Agenda, and AmBisyon Natin 2040.

While R&D projects have a beginning and an end, communicating Science for the People is a process that never, ever ends. The public must be kept up to date on all the developments in the areas of science, technology, and innovation. With these starting points and efforts so far, it is hoped that science communication will cut across disciplines, so it can drive and enable the country's quest for a prosperous, safe, healthy, and innovative future.

All those who have been part of this S&T communication journey deserve thanks and appreciation.

Nothing gives greater satisfaction than to witness this transformation, this change for the better. Communities become more resilient, entrepreneurs become more competitive and profitable, children learn better in and out of school, and even academics and scholars embrace science for the people.


STARBOOKS
DOST-STII
San Miguel National
High School - Tabaco
City
User Login
DELL


Republic of the Philippines
PROVINCE OF BENGUET
MUNICIPALITY OF TUBLA
Project:
Location:
Implementing Office:
Cost:
Fund Source:
Contract/Reference No.:
Delivery Period:
Contractor/Supplier:
Brief Description of the Project:
Price Details:
JEC DATE
PROJECT STATUS


DOSTv
DOSTv SA RADYO
Science For The People
WEATHER REPORT


DOST
NATIONAL RESEARCH AND DEVELOPMENT CONFERENCE 2019
Harmonized R & D towards Accelerated Growth and Prosperity
03 APRIL 2019 | PHILIPPINE INTERNATIONAL CONVENTION CENTER, PHILIPPINES
In cooperation with
dti


STI @ HOME


NEWS
YOU CAN
TRUST
NEWS
YOU CAN
TRUST


HEXAGON
MSC Software
materialise
ZEISS
9D PRINT.PH
PUZZLEBOX 3D
ATI
FAB LABs
LINCOLN ELECTRIC
AMCen
SOLIDWORKS
Ultimaker
Markforged
RAISE3D
Modix
Summa
AMCen

EPILOGUE

Many nights we prayed
With no proof, anyone could hear
In our hearts a hopeful song
We barely understood
Now, we are not afraid
Although we know there's much to fear
We were moving mountains
Long before we knew we could, whoa, yes
There can be miracles
When you believe
Though hope is frail, it's hard to kill
Who knows what miracles you can achieve?
When you believe, somehow you will
You will when you believe

— Sung by Whitney Houston and Mariah Carey in
the movie The Prince of Egypt

The seven-year itch is the notion that after several years in a relationship, a couple could feel restless, maybe bored, and things could become humdrum and routinary. Decay, disruption, and divergence could be imminent. It has been almost seven years to the day when we started at DOST-STII, and the journey has been anything but boring and ordinary. Indeed we have witnessed the institute transform and ascend in many remarkable ways. After seven years, we are all fired up to excel even more. We have conquered the seemingly insurmountable and must press on to scale the summit that lies just ahead of us.

Our budget has more than doubled. Our plantilla has increased by 11% and grown younger from an average age of 46 down to 35. Our facilities have been upgraded, and we continue to expand. Two of our projects, STARBOOKS and DOSTv, are included in the National Priority Plan of NEDA and harvested many awards and accolades here and abroad. We are ISO accredited. We topped all DOST agencies in internal control systems and ranked third in gender mainstreaming. We have attained level 2 in the PRIME-HRM program of the Civil Service Commission and are among only 37 government agencies being groomed for level 3. Our financial performance metrics are outstanding. Where we were laggards in our communication strategies and execution, we now lead the charge in social media with more than 30 million engagements per annum and media coverage valued at 21 billion pesos at the end of 2022. We now have a Science Communication Agenda and a Science Communication Framework to guide the way forward for ourselves and our cohorts.

We pivoted, performed, and excelled during the pandemic, driven despite disruptions, always championing innovation in the face of acute resource constraints. As a result, the national awareness level about science, technology, and innovation information has unbelievably grown from 6% in 2017 to 47% in 2022.

There must be a science for increasing awareness. But then again, there must as well be art and heart in this entire enterprise. Their confluence has produced results we could only dream of at the start. We believed, and the miracle happened.

With awe and gratitude, we acknowledge the contributions of many persons and groups who threw in their weight to factor into the equation for our success (designations as of this writing):

Former Secretary Mario G. Montejo
Former Undersecretary Carol M. Yorobe
Former Undersecretary Rowena Cristina L. Guevara
Former Undersecretary Amelia P. Guevara
Former Undersecretary Brenda L. Nazareth-Manzano
Former Assistant Secretary Teodoro M. Gatchalian

Former Assistant Secretary Emmanuel S. Galvez
Secretary Renato U. Solidum, Jr.
Undersecretary Maridon O. Sahagun
Undersecretary Leah J. Buendia
Undersecretary Sancho A. Mabborang
Assistant Secretary Diana L. Ignacio

Heads of Agencies and Regional Offices
The valiant officers and staff of DOST-STII
The Media Core
Our friends from the media
Our partners from industry and academe, NGAs, NGOs and CSOs (see appendix)
The team of CAN Creative Capital

Now we are not afraid.

The poet, long gone, has crafted the song we sing in our hearts:

Invictus
By William Ernest Henley

Out of the night that covers me,
    Black as the pit from pole to pole,
I thank whatever gods may be
    For my unconquerable soul.

In the fell clutch of circumstance
    I have not winced nor cried aloud.
Under the bludgeonings of chance
    My head is bloody, but unbowed.

Beyond this place of wrath and tears
    Looms but the Horror of the shade,
And yet the menace of the years
    Finds and shall find me unafraid.

It matters not how strait the gate,
    How charged with punishments the scroll,
I am the master of my fate,
    I am the captain of my soul.

APPENDIX

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
CRPD PARTNERSHIPS (2017-2022)		
1. Manila Times	May 2021 to December 2021	Content Sharing
2. Association of Science and Mathematics Educators of Philippine Private Schools (ASMEPPS)	November 01, 2021	Jointly develop and deliver capacity building programs on science communication, promotion and advocacy for various stakeholders including, but not limited to, students, teachers, employees, scientists and researchers
PARTNERS FROM THE ACADEME		
1. Batangas State University - Pablo Borbon Campus, Development Communication Department	August 2021 to August 2022	Conducted a webinar for Faculty personnel on September 8, 2022 dubbed as SCIENCE JOURNO AKO: THE ART AND SCIENCE OF SCIENCE COMMUNICATION
2. Centro Escolar University - Media and Communication Department	November 01, 2021	Co-produced four episodes of the online show titled “Centrong Agtek” aired on Science Journo Ako and Centro News Facebook Pages
DOSTv PARTNERSHIPS (2017-2022)		
1. Samsung Electronics Philippines Corporation	2017	Donation of one large format TV display
2. People’s Television Network (PTV-4)	2017 to March 2020	Paid Partnership - Airing of DOSTv broadcast program over PTV-4 every Monday to Friday at 9:30 AM
3. Global News Network (GNN)	2017 to January 2019	Paid Partnership - Airing of DOSTv broadcast program over GNN every Monday to Friday at 11:00 AM and 4:00 PM
4. Philippine Society of Youth Science Clubs (PSYSC)	2017 - 2019	Media Partnership Coverage and promotions of PSYSC events/activities
5. Kantar Media Philippines	2017 - 2019	Paid Partnership - DOSTv Media Monitoring

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
6. Womensphere	2018	Media Partnership - Coverage and promotions (2018 NASA Space Apps Challenge Makati-BGC)
7. Enchanted Kingdom Inc. (EK)	2019	Donation of EK park tickets
8. Worldbex Services International	2019	Media Partnership - DOSTv exhibit booth at WOCEE 2019, World Trade Center
9. Media Blast	2019	Paid Partnership - DOSTv online advertising
10. GMA News TV	2019	Paid Partnership - Airing of Siyensikat over GMA News TV every Sunday at 4:30 PM
11. University of the Philippines (UP) Academic League of Chemical Engineering Students, Inc.	2019 - 2020	Media Partnership - Coverage and promotions of UP Alchemes events/ activities
12. Digital-Out-Of-Home (DOOH)	July 15, 2019 to August 15, 2019 November 18, 2021 to December 17, 2021	LED and static billboard placement for 1 month with extended placement for 2 months for free (extension has no separate contract) LED billboard placement for one month with two free locations
13. TripplesPH Corporation	2020	Online promotion of DOSTv episodes
14. Summit Publishing Co. Inc. (Summit Media)	2021 - 2021	Paid Partnership - DOSTv LED billboard placement
15. United Neon Advertising Inc.	2020 - 2021	Paid Partnership - DOSTv LED billboard placement
16. Outcomm Media Inc.	2022	Paid Partnership - DOSTv LED billboard placement
17. Carl Balita Review Center (CBRC) TV	September to November 2020	Shared broadcasts of DOSTv segments on the CBRC TV official Facebook account

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
18. CNN Philippines	October to December 2021 and April to July 2022	Paid Partnership - Airing of Siyensikat over CNN PH every Saturday and Sunday at 8:00 AM and 4:00 PM
	November 2022 to January 2023	Paid Partnership - Airing of Expertalk over CNN PH every Sunday at 8:00 AM with replay every Saturday at 8:00 AM and 4:00 PM
	September 2022 - present	Free airing of Science and Technology segment on "The Final Word with Rico Hizon" every Friday
19. Hyundai Asia Resources Inc.	November 24, 2021	Donation of two brand new Grand Starex vans
20. EdukSine	December 2022	Placement of DOSTv content on their website (https://app.eduksine.com)
IRAD PARTNERSHIPS (2017-2022)		
1. Bangko Sentral ng Pilipinas (BSP)	January 28, 2019	Donation of BSP Information Materials
2. Philippine Librarians Association Inc. (PLAI)	November 2021 to February 2022	Conduct of Webinars with CPD points during the LIS month
3. Association of Special Libraries of the Philippines (ASLP)	March 2022 to March 2023	Conduct of Webinars with CPD points
PARTNERS FROM THE ACADEME		
1. Bulacan State University (BulSU)	July 2022 to July 2023	Cooperation in the field of faculty development program, student training program, and benchmarking activities
2. University of Perpetual Help System Laguna (UPHSL)	August 2022 to August 2023	Bachelor of Library and Information Science Student Training Program

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
STARBOOKS PARTNERSHIPS (2017-2022)		
1. FrontLearners Inc.	February 2017 to February 2018	Provided DOST-STII the digital copy of the FRONTLEARNERS BlendEd Learning collection without any fee to be included in the STARBOOKS database
2. Children's Hour Philippines, Inc.	March 2017 to March 2018	Donated two computer sets with STARBOOKS Kiosks to Bio B. Modol Elementary School in Kabayan, Benguet
3. Infinit-O Group Foundation	May 2017	Donated five computer units with STARBOOKS to Likhani Multipurpose Cooperative in Legazpi City, Albay Donated 13 computer units with STARBOOKS Philippine Foundation for Science & Technology (PFST) - Philippine Science Centrum
4. Telstra Foundation (Philippines) Inc.	May 2017 to May 2018	Telstra Foundation Philippines agreed to make a grant in materials and services to seven pre-selected public schools and organizations, five of which were provided with solar-powered STARBOOKS
5. World Food Programme	August 18, 2017	Provided 112 computer units to different beneficiary schools in Luzon, Visayas and Mindanao
6. Corazon Sanchez Atayde Memorial Foundation, Inc.	February 19, 2018	Donated three computer units with STARBOOKS Kiosks to Rizal Elementary School in Makati City Donated solar-powered STARBOOKS to Magalipit Elementary School Donated computer units with STARBOOKS in CAR.

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
7. Global Peace Foundation (GPF) Philippines	April 2018 to April 2019	Provided the digital copy of the GFP collection without any fee to be included in the STAR-BOOKS database
8. Enchanted Kingdom, Inc.	September 2018 to September 2019	Provided DOST-STII 360 Regular Day Passes Park tickets plus AGILA the Eksperience valued at PHP 900 (around USD 18) each to be distributed monthly (30 tickets/month) for 12 months to support the promotion of STARBOOKS at EK
9. Knowledge Channel Foundation, Inc.	2018 - 2019	Partner in conducting STARBOOKS conventions; Provided experts on STEM education
10. National Library of the Philippines	2020	Partner in conducting trainings or webinars
11. Food and Nutrition Research Institute (DOST-FNRI)	2019	Provided digital copy of the raw, processed, and curated data collection of their office without any fee to be included in the STARBOOKS database
12. Department of Energy	September 28, 2019	Provided additional library materials about energy to be included in the STARBOOKS database
13. C&E Publishing, Inc./ Blupoint Ltd	October 2019 to October 2020	Provided three BTP that are free of charge to top three schools or institutions in the Best Prize category of DOST-STII STARBOOKS Program at the STARBOOKS Convention in Westmont Hotel, Iloilo Visayas, on October 23 and 24, 2019
14. Freedom of Information - Project Management Office (FOI-PMO)	November 15, 2019	Provided DOST-STII the digital copy of the raw, processed and curated data collection of their office without any fee to be included in the STAR-BOOKS database

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
15. Weather Philippines Foundation	December 11, 2019	Provided DOST-STII with a digital copy of the content to be included in the STARBOOKS database
16. Association of Science and Mathematics Educators of Philippine Private Schools (ASMEPPS)	2019	Partner in conducting STARBOOKS conventions in 2019
17. Department of Education	February 14, 2020	STARBOOKS will be preloaded to DCP units for public schools
18. Carl E. Balita Review Center (CBRC)	June 12, 2020	Provide STARBOOKS-enabled computers located in its chosen centers/omni resource hub for either online or offline setup Integrate STARBOOKS link on CBRC's Digital Archives and CBRC Virtual Learning mobile application
19. FlipScience PH	June 22, 2020	Content Partnership
20. UNILAB Foundation Inc. / Center for Integrated STEM Education, Inc. (CISTEM, Inc.)	June 22, 2020	Training, content, and marketing partnership
21. Philippine Rice Resarch Institute (PhilRice)	June 22, 2020	Provided DOST-STII the digital copy of PhilRice Publication collection without any fee to be included in the STARBOOKS database
22. Tripples PH	June 22, 2020	Marketing partnership
23. Lenovo Philippines	October 22, 2020	Sponsored Lenovo laptops and tablets for STARBOOKS
24. DICT CIO Service and External Resources Management Division - Tech4Ed Project	March 2017 to March 2018	Provide STARBOOKS-enabled computers to its chosen computers to its chosen beneficiaries as part of their Tech4ED project, by way of conditional transfer of property/deed of donation

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
25. Quipper Philippines, Inc.	November 17, 2021	Provided five free STARBOOKS enabled computers to chosen beneficiaries for one year
26. Kaisipan.org	2022	Content Partnership
27. DOST-Advanced Science and Technology Institute (DOST-ASTI)	2022	Make the STARBOOKS resources available through LokaLTE and RuralCasting to selected pilot grade schools and high schools
28. Indang Cavite Highlands 103 Lions Club	2022	Sponsor STARBOOKS enabled compters to chosen beneficiary communities or schools
29. Turkish Cooperation and Coordination Agency (TIKA)	2022	Sponsor solar-powered STARBOOKS to chosen beneficiary schools in Palawan and Mindanao
30. ABS-CBN Lingkod Kapamilya Foundation, Inc.	June 21, 2022	Installation of STARBOOKS in their sponsored learning hubs through Programa Genio
31. Pagbilao Electric Company	October 07, 2022	Provided solar-powered STARBOOKS to school and community beneficiary of Pagbilao, Quezon
32. DOST-Region VII	2022 - 2023	Partner for the project STARBOOKS Nature
STARBOOKS PARTNERS FROM THE ACADEME		
1. Rizal Technological University - Department of Earth and Space Sciences (RTU-DESS)	November 11, 2020	Provided the digital copy of the PDF, DOC, MP3, MP4, JPG, PNG files of the astronomy collection withour any fee to be included in the STARBOOKS database
2. DOST-Philippine Science High School	June 03, 2021	Provided the digital copy of the video materials developed by Leo Andrei Crisologo without any fee to be included in the STARBOOKS database

PARTNERS	DURATION/DATE	AREAS OF COLLABORATION
3. Asia Pacific College	June 09, 2021	Provided the digital copy of the applied research outputs (project-based learning documentation) collection without any fee to be included in the STARBOOKS online and offline database
4. Silliman University - Siliman Journal	October 06, 2021	Provided the digital copy of the Silliman Journal without any fee to be included in the STARBOOKS online and offline database
FAD PARTNERS		
1. Government Procurement Policy Board (GPPB) - Technical Service Office (TSO)		
2. Government Procurement Policy Board - Technical Support Office		
3. DBM, Budget and Management Bureau F		
4. Office of the Solicitor General		
5. Commission on Audit		
6. Landbank of the Philippines		
7. Civil Service Commission - DOST Field Office		
8. Local Government of Taguig		
9. Occupational Safety and Health Center		
10. PDEA NCR - PECI Section		

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For more information about the Department of Science and Technology and their programs:

Website: www.dost.gov.ph
Facebook: www.facebook.com/DOSTph

DOST Building
General Santos Avenue, Bicutan, Taguig City
Metro Manila, Philippines 1631
Phone: (632) 8837-2071 to 82 or (632) 8837-2937
Email: osec@dost.gov.ph

ABOUT THE AUTHORS

RICHARD POMAR BURGOS is a seasoned communicator with over 35 years of progressive responsibility in international, multinational, and national organizations such as corporate communications, public relations, marketing, broadcasting, brand management, corporate social responsibility, corporate governance, risk management, events management, publications, speechcraft, and general office management.

He has a keen appreciation for the role of effective communications and collaboration at the processor, individual contributor, team, and leadership levels within a connected, globalized environment. He brings this appreciation to create added value to the organizations he worked for, including the International Crops Research Institute for the Semi-Arid Tropics; Enchanted Kingdom; leading IT companies such as IBM, HP, and Sun Microsystems; and the University of Negros Occidental-Recoletos, where he began his career as a Spanish language instructor.

Along with being the Director of the Science and Technology Information Institute of the DOST, he is an active member of the International Public Relations Association. He volunteers for the non-government organization, BahayTuluyan, and supports programs to help blind children acquire computer literacy skills through Resources for the Blind Inc. and Adaptive Technology for the Rehabilitation, Integration and Empowerment of the Visually Impaired.

FORTUNATO TANSECO DE LA PEÑA has served as the Secretary of the Philippine Department of Science and Technology (DOST) from July 2016 to June 2022.

He obtained his BS in Chemical Engineering and MS in Industrial Engineering degrees from the University of the Philippines (UP).

He taught Industrial Engineering and Operations Research at the UP College of Engineering for 43 years, from 1973 to 2016, while also serving on a secondment basis at the DOST, occupying various positions between 1982 to 2011.

He served as Vice President for Planning and Development at the University of the Philippines and as Undersecretary of the DOST prior to his retirement in 2014.

He was President of the following organizations: The Philippine Institute of Chemical Engineers, the Association of Management and Industrial Engineers of the Philippines, the Philippine Association for the Advancement of Science and Technology, and the National Research Council of the Philippines. He also served as Chairman of the UN Commission on Science and Technology for Development in its 15th Session from 2011 to 2012.

He received awards from the Professional Regulation Commission, the Civil Service Commission, the Career Executive Service Board, the UP Alumni Engineers, the UP College of Engineering, the UP Alumni Association, and the Ateneo de Manila University. In 2018, the University of the Philippines conferred on him the degree of Doctor of Laws (*honoris causa*).

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