

Enabling Research through Research Management

The Case of India

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Cover design by,
Ravi Kumar Yadav,
Centre for Civil Society

Authored by,
Bhavya Mehta and Ishita Puri, Centre for Civil Society

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For more information and other requests, write to:
Centre for Civil Society
A-69, Hauz Khas, New Delhi – 110016
Phone: +91 11 2653745
Email: ccs@ccs.in | Website: www.ccs.in

Enabling Research through Research Management

The Case of India





Jaquaranda Tree



Date: 23rd July 2022

FOREWORD

“**Enabling Research through Research Management: The Case of India**” is a timely report produced by the Centre for Civil Society (CCS) in conjunction with the Manipal Foundation. It addresses some important questions about research management support available at institutions for researchers in India.

The Science and Technology Policy 2020 of the Government of India refers to the “ease of doing research” as a key enabler of research for India and for reducing administrative burden on researchers. In-house Research management at Indian institutions is a crucial institutional service towards this purpose. The field includes all institutional activities aimed at facilitating research, without being part of the research process itself. This support is typically extended to researchers through the entire research lifecycle, in areas such as partnership building, pre-award services, post-award management and research output management.

Several Indian institutions are at early stages of creating such comprehensive support services for their researchers. This is unlike the situation in other countries such as the US and UK, where research management services have attained a high level of maturity, professionalism and acceptance within the research communities. In parallel, research managers in these geographies have access to journals and other publications devoted to the field, which offer the scope for peer-reviewed documentation of insights into the profession. The CCS report is a valuable snapshot of research management in India, particularly at a time when other existing documentation on the subject is rather limited.

The CCS report examines the current landscape for research management in India, reconstructed through case studies of leading institutions and conversations with research managers providing such support at higher education institutions in India. The report identifies key challenges in developing this aspect of the Indian research ecosystem, and additionally examines the importance of national initiatives such as IRMI, the India Research Management Initiative of the DBT/Wellcome Trust India Alliance, in creating a community of practice for research managers in India. The report provides a useful perspective to researchers, research managers and institutions and sets out useful suggestions for pathways for change.

I am sure that the contents of the report will offer an opportunity for reflection and planning in this area for the Indian research community.

Savita Ayyar, PhD

Founder, Jaquaranda Tree

Consultant on behalf of DBT/Wellcome Trust India Alliance and Lead for the India Research Management Initiative <https://indiaalliance.org/india-research-management-initiative>

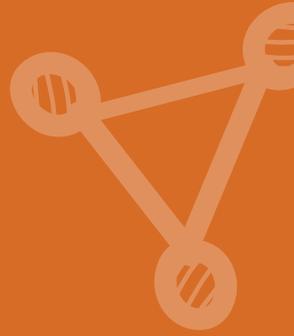
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We would also like to extend our gratitude to Manipal Foundation for their generous and continuous support for this study. We are thankful to Ravi, our in-house designer, whose skills have enhanced the visual appeal of this report. Lastly, we also thank our past interns who contributed in putting together data for research management offices and initiatives around the world.





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Abbreviations

AIU	Association of Indian Universities
ARMS	Australasian Research Management Society
BLiSC	Bengaluru Life Sciences Cluster
CCAMP	Centre for Cellular and Molecular Platforms
CRIKC	Chandigarh Region Innovation and Knowledge Centre
DBT	Department of Biotechnology
EU	European Union
ERID	External Relations & Institutional Development
FERCI	Forum for Ethics Review Committees in India
HEI	Higher Education Institution
IRMI	India Research Management Initiative
IISER	Indian Institute of Science Education and Research
IIT	Indian Institute of Technology
I-STEM	Indian Science Technology and Engineering Facilities
inSTEM	Institute for Stem Cell Science and Regenerative Medicine
IPR	Intellectual property rights
INORMS	International Network of Research Management Societies
IPRC	International Professional Recognition Council
IRINS	Indian Research Information Network System
MAHE	Manipal Academy of Higher Education
MERU	Multidisciplinary Education and Research University
NCBI	National Center for Biotechnology Information
NCBS	National Centre for Biological Sciences
NRF	National Research Foundation
OECD	Organisation for Economic Co-operation and Development
PM-STIAC	Prime Minister's Science, Technology and Innovation Advisory Council
R&D	Research & Development
RAAAP	Research Administration as a Profession
RIMS	Research Information Management System
R&D	Research and Development
RDO	Research Development Office
RM	Research Management

RMA	Research Managers and Administrators
S&T	Science & Technology
STIP	Science, Technology, and Innovation Policy
STEM	Science, Technology, Engineering, and Math
SADC	Southern African Development Community
SARIMA	Southern African Research and Innovation Management Association
SOP	Standard operating procedure
StoRM	Strengthening of Collaboration, Leadership and Professionalisation in Research Management
TEC	Technology Enabling Centre
THSTI	Translational Health Science and Technology Institute

Executive Summary

Earlier this year, the Government of India released a new set of guidelines for reducing administrative and compliance burden on researchers, in line with its 'less government, more governance' theme. The significant amount of time spent by researchers on dealing with the administration and compliance requirements is known to most in the Indian research ecosystem. While efforts such as the new guidelines by the government are a positive change towards reducing a part of this burden from a grants and project-review process perspective, the lack of in-house support makes it increasingly difficult for Indian researchers to manage and navigate through these difficulties. As of today, a minuscule number of research institutions have dedicated assistance mechanisms for efficient management of their research projects.

The field of research management (RM) has emerged as a tool to create an enabling research environment within universities, where researchers can get support, including but not limited to management of their research grant, getting legal and technology transfer-related advice and finding ways of increasing the impact of their research and innovation.

In this report, we discuss some of the current conceptual challenges related to RM and look into the details of the current scenario and future potential of RM in India. This report has emerged from the study of cases in India and around the world, coupled with one-on-one interactions with some of the leading

professionals engaged in providing RM services at Indian higher educational institutions (HEIs). Some of the key findings that emerged from this study include the evolving RM priorities of Indian HEIs and the lack of a defined career trajectory for RM professionals engaged in providing the service.

We discuss in detail the current and potential role of various stakeholders in the RM system. A dedicated chapter on the role of markets highlights the current lack of involvement of the private sector and the potential it has to transform research management in India—as a service provider, a contributor and a beneficiary. Chapter 5 of the report provides insights on the likely future directions of RM and suggests ways for it to enter the mainstream narrative of 'how an enabling research environment at Indian HEIs should look like'. It also touches upon certain aspects of automation and sophisticated benchmarking mechanisms for in-house RM units. The way forward for research universities without any current RM mechanism has also been discussed in detail.

We hope that the contributions made through this report shall provide key inputs to India's Science, Technology, and Innovation Policy (STIP) and the formation of the National Research Foundation (NRF), thus contributing to the creation of an enabling environment for research and furthering its efficient management in the country.

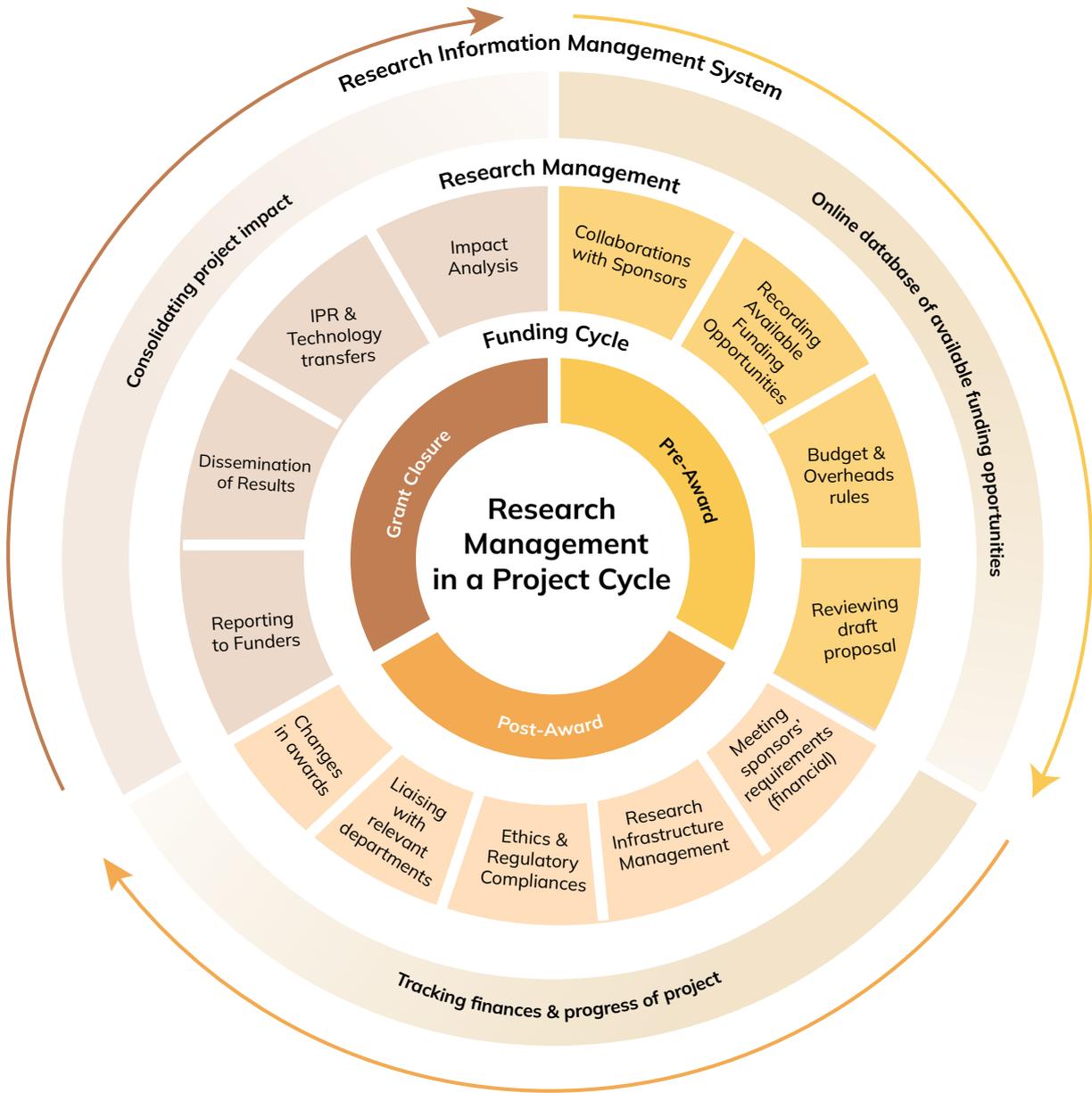


Chart 1: Research Management and Research Information Management System in a Project Cycle

Introduction

Introduction

Research in India has evolved over the last few years, and so has the practice of research management (RM)—unfortunately, both at a slow pace. The evolving nature of the research ecosystem has increased the complexities of research funding, research infrastructure, and matters of intellectual property rights, among other things. The need for research management support and research development offices (RDO) in Indian research institutions is evident.

Investigators currently spend a significant amount of time managing the administrative burden associated with managing their grants and research projects, with very few institutions in the country providing in-institution research management support to them. It seems to be a chicken and egg issue. If research improves, research management services grow; if research management grows, it facilitates the growth of research. Which one should we focus on? Since research management exists to support research, enhancing research indeed becomes more critical for institutions. However, at this stage of growth in R&D, we must not forget to invest in providing the required optimal research management support to our researchers.

This report uses primary and secondary data to look into the details of the current scenario of research management in Indian HEIs and what its potential future direction should look like.

The report explores the conceptual challenges in defining what research management entails, the nuances of it in India, key stakeholders, and the appropriate future directions for it in the country. We also focus on the role that markets can play in furthering research management in India—an angle that has largely been neglected in the country till now.

To collect primary data in the form of anecdotes, opinions, and experiences, we interacted with professionals in top HEIs of India, who are actively working towards providing quality support to the researchers of their respective institutions. These professionals are engaged in roles spanning across grant management, ethics & compliance, research collaborations, intellectual property rights (IPR) management, research communication, industry-institute partnership, and infrastructure & personnel management, hereinafter collectively referred to as Research Managers and Administrators (RMAs). Case studies from around India and quotes from research management professionals are weaved into the report to provide more context and spotlight certain aspects.

Before discussing India's current status with respect to research management, we must understand what RM is and why professionals across the world have struggled to agree on a scope and definition for the field.

Chapter 1

Definitions and Conceptual Challenges

According to Green and Langley, research management “embraces anything that universities can do to maximise the impact of their research activity” (Green and Langley 2009). In other words, research management, as a concept, incorporates all administrative, technical, financial and liaising tasks (to name a few) that are assigned to scientifically trained professionals to assist Principal Investigators and other departments of an HEI.



Dr Vandana Gambhir

Head - Grants Office and IPR Cell, IISER Pune

** The views are personal in nature and they are not represented or warranted on behalf of/by her place of work*

The explanation proposed by Green and Langley highlights **two primary features of research management** as a practical discipline: **HEIs as the definitive factor determining its nature and mandates, and the absence of distinct structures.** The desire to discuss the theoretical conceptions surrounding Research Management in this chapter emerges as an outcome of the current research climate and the above features.

The outbreak of the COVID-19 pandemic has brought to the front the importance of research and innovation in STEM-related disciplines. As the world waited for the development of vaccines, researchers and research managers worked extensively to ensure that their projects met the administrative, ethical, financial and regulatory requirements of their sponsors (Labuschagne 2021). Increased emphasis on STEM research efforts post-pandemic has provided an impetus for analysts and policymakers alike to revisit the issues plaguing university-based STI research ecosystems and strongly consider research management as an instrument to address the same.

The nature of responsibilities undertaken by the research management office of a university is largely derived from the priorities and specialisations of its parent institution. With the mandate of assisting scientists in research work,

they don many hats - from collating funding opportunities and proposal submission to project management, acting as a liaison among different departments (internal and external), and providing specialised support in fields of technology transfers, outreach and scientific communication.

Given the diverse research specialisations and academic distinctions involved herein, it is thus difficult to objectively summarise the essential functions of a research management office. For example, RM offices in HEIs that lean heavily towards promoting industry-institute collaborations would also incorporate technology transfers, IPR support, contract negotiations, and other skill sets necessary for the same.

As an outcome of the prevailing subjectivities at a conceptual level, ambiguity surrounding the establishment of proper structures emerges as a challenge at the implementation stage. According to an online survey conducted among subscribers of Research Administration Listserv (RESADM-L), 76% of the respondents believed that research management includes diverse responsibilities (Davis-Hamilton and Marina 2016). At times, scientists themselves are unaware of the exact responsibilities covered by their research managers, adding to the ambiguity of the structure.

Hence, in the practical context of an institution's needs and requirements, the roles and functions within an RM office are derived from the research and institutional objectives of HEIs. Consequently, **several variations can be observed in the structural evolution and current scenario of RM, which a general definition fails to incorporate.** The global struggle to arrive at a standard definition of Research Management and its functions highlights these discrepancies.

For instance, a benchmarking study conducted by the Association of Commonwealth Universities explained research management as *“any activity instigated at the level of the institution which seeks to add value to the research activity of staff, without being part of the research process itself”* (Kirkland et al. 2006). Though this definition emphasises the role of research management and the position of HEIs in determining its composition, it falters while keeping RM officials separate from the main research activities. **This segregation undermines the key advantage that research administrators bring to the table—an ability to understand the requirements of STEM R&D and balance it with the knowledge of administrative regulations.**

The Frascati Manual released by OECD in 2015 details the mandate and responsibilities of research management, simultaneously **also placing them as crucial actors in the entire R&D process.** It says - *“R&D personnel typically perform supporting functions connected to R&D such as planning, information and financial support, legal and patent services, and assistance in assembling, adjusting, maintaining and repairing scientific equipment and instruments. Managers and administrators dealing mainly with financial and personnel matters and general administration, insofar as their activities are a direct service to R&D.”* (OECD 2015)

The following section covers certain pivotal ideas of India's research management field by tracing its growth in HEIs, its initial priorities and successful models.



Chapter 2

Research Management in India - The Current Scenario

Facilities for research management in institutions take various forms depending on the resource availability and key priorities of the institution. Administrators at Indian institutes started by providing different types of research management support to their researchers. Some RDOs first began by collating a list of extramural funding options available for the researchers depending on their current fields of research. Many who started with such a service now have dedicated administrators working to provide pre and post-award grant management support.

The Research Development Office of the [Bangalore Life Science Cluster](#) is known to be among the initial educational institutions in India to set up a dedicated unit for providing research management support to its researchers. This helped the cluster to attract competitive funding from various sources, including national, international, philanthropic and corporate funding for its research projects.

The interest in research management received its much-needed impetus from the 2016 scoping study conducted by Wellcome Trust, followed by the 2017 survey by India Alliance on research management. The month of February 2018 saw the establishment of the India Research Management Initiative ([IRMI](#)) by the India Alliance, which started as a 12-month pilot and has now taken a shape that is driving the cause of research management and contributing to capacity building in the field.

As of today, the number of positions available and options for career growth for Indian research managers and administrators is significantly low. As discussed in the previous chapter, the scant detail on the definition and scope for research management adds to the ambiguity of the magnitude and kind of impact it has the potential to create for the R&D ecosystem of the country. Lack of SOPs, structures, recognition and leadership support are only a few of the reasons for the staggering scenario of research management in India. This section elaborates on some key aspects of the current scenario of research management at Indian HEIs.

LACK OF SYSTEMS AND THE NEED FOR RECOGNITION

Results of the 2017 anonymous voluntary survey of India Alliance Fellows showed that *“only 18% of respondents confirmed the presence of a Research Development Office at their institutions”* (Ayyar and Jameel 2019). This lack of systemic support to researchers has often been characterised as one of the reasons for the stunted growth of research in the country. While some pioneering organisations have set up certain good practice examples for India’s research management offices to follow, they are scattered and few. Several research institutions continue to operate without any dedicated individuals or institutional units to support the researchers.

In her article in the Wellcome Open Research, Dr Savita Ayyar points out the phenomenon of best practices being brought into the several new RM structures at Indian institutions by the *“lateral movement of scientific administrators trained at funding agencies”*.

Though there has been promising growth in the narrative supporting research management and the actual expansion of some RDOs, it only exists in pockets. A systemic policy level change is required for the overall growth of the field across all research institutions of the country. There is a need to clearly define the scope

of work for the RDO, keeping in mind the roadmap and vision for growth of the office, the personnel as well as the research output of the institution in question. This can be done by creating a broad set of roles and responsibilities for the office and defining the key performance indicators for its personnel. Networking and engagement with the community of research managers within and outside India have been one of the major ways the roadmap for several research offices has been designed. The International Network of Research Management Societies ([INORMS](#)) and the [IRMI Annual Conference](#) have played a pivotal role in connecting the community and keeping the network engaged. This emerging sense of community has helped rapidly foster the ecosystem's growth in the last few years. Established research offices have also expanded their scope and started providing services beyond pre-award and post-award while borrowing learnings from one another.

Recognition and dignity for the profession have been some of the key issues that some of the interviewed experts for this study also highlighted. While some of the national funding agencies are increasingly recognising the value in engaging with the RMAs of an institution, engagement with several other funders at times is not as smooth. Reputed international funding agencies and corporate funders also tend to acknowledge the value that RMAs bring in efficiently managing a research project. The International Professional Recognition Council ([IPRC](#)) is a notable example to study in this regard. The council has been set up with the objective of providing professional recognition to research management professionals globally, with a particular focus on Africa. The next major step for India's research ecosystem is also to create some form of recognition for the job positions and careers of RMAs, not just by recognising the value and contribution of a well-performing RM professional but also the merit in the existence of the 'job position/job role' in the institution.

RESEARCH MANAGEMENT AS A CAREER

While conducting interviews for this study, we asked research managers about what a person's career trajectory in this field looks like and if there is a usual structure to it. It was noted that the course is largely undefined, with only a handful of options for growth. However, over the last few years, people are increasingly getting curious about this subject, and it is also occupying media space at research management conferences and events. Internship opportunities also appear to be largely absent for those seeking exposure to the field. People have to rely on talking to existing offices and seeking internships. For internships to emerge as feasible entry points to the field, the demand by potential interns should be met by HEIs that are willing to create opportunities for them. Given the confidential nature of information in RDOs, institutions would have to create job roles with adequate structure and sensitisation regarding the work involved. This situation is further exacerbated by a general lack of funding, leading to a dearth of paid internship opportunities.

One of our interactions with a grants manager also highlighted that while there is training and promotion from junior office to leadership in fields such as accounting administration, research management as a profession lacks that clarity of career path. A roadmap is missing.

As a career, research management is yet to become a lucrative option for individuals. Interview responses received from our experts also echoed the need to

fill this gap and strive to make research management a competitive field. In order to achieve this goal, we must focus on providing appropriate recognition of skills, making available proper training opportunities, setting up specific key performance indicators for the professionals, and devising ways of impact analysis of the research management setup in general.

According to a [survey](#) conducted by Research Administration as a Profession (RAAAP) taskforce, with participants from around the world, the majority of RMAs do not have an RMA certification (Kerridge and Scott 2018, 24). Similar seems to be the case across nations. Although India had not participated in the first survey (2018), RM professionals from the country recorded their views in the second and third iterations of the survey. The absence of formal training for RM is an issue that resonates with many RM personnel across several nations.

Currently, there are no professional courses or degree programs available in India specifically catering to science/research administration or research management. While degree courses such as hospitality administration, sports management, library and information science, etc, are gaining momentum with few universities offering master's or bachelor's courses, Research/Science Administration degrees seem largely absent from the education ecosystem of India. One can only attend webinars and workshops offered by organisations and initiatives such as [IISER](#) Pune and IRMI to upskill oneself. Some of the degree course options available outside of India include Master In Research Administration and MS in Research Administration & Compliance offered by Johns Hopkins University and University of Central Florida, respectively, to name a few. One can also opt for University Of Maryland's unique online 12-credit graduate certificate program.

Another notable initiative is [StoRM](#) (Strengthening of Collaboration, Leadership and Professionalisation in Research Management), established to offer Postgraduate Diploma courses (for early-career RMAs), executive Masters degree (for mid-career RMAs), a recognition mechanism (for senior RMAs) and a few mentorship and exchange programs across the European Union (EU) and Southern African Development Community (SADC) regions. Indian universities can also look to explore the option of including research administration skills as part of some of the research-oriented degrees currently available and actively gauge the interest and impact of a full-fledged degree course tailored to the Indian context. Institutions such as IISER, who have taken up initiatives to provide relevant training to researchers and administrators through workshops such as '[Scientific Project Financial Management](#)' Training, can play a crucial role in making this vision a reality.

The Professional Development Committee at IRMI alliance is designing a comprehensive course that would aid in the training of RM personnel. Through consultations with other associations, the committee has adopted a peer-based system—constituting working groups with members from different backgrounds—for the development of individual modules within the course.

Given the lack of academic courses and internship opportunities, we may ask, how does one enter the field of research management? Studies conducted in various parts of the world show that research management professionals have had an unstructured entry point in most institutions. Most people engaged in these roles did not begin their careers with the aim of joining institutions as a research administrator, and hardly anyone of them has an undergraduate or postgraduate degree specifically obtained with the aim of becoming a research manager/administrator. Thus, as of today, there is no structured way to equip oneself to enter

the research management field. Therefore, relying on networking and keeping an eye out for public announcements of entry-level positions has been one of the most used ways by early-career research managers.

The understanding of a research project's life cycle, project management skills and the ability to problem-solve and multitask have become some of the key requirements of job openings at research administration offices across institutions. Soft skills are also one of the key skills when one progresses from entry-level to mid-level, particularly in senior management positions in the field. Knowledge of changing regulations and compliance requirements is key for certain roles in the field.

The need for long-term opportunity creation has been well captured by Dr Savita Ayyar in an article, where she highlights the need for defined norms of recruitment “for hiring scientifically trained staff to purely management roles in research organisations supported by the government” in particular. A handbook for research managers released by the Southern African Research and Innovation Management Association discusses the existing literature that explores the recruitment of academics into research management roles. It highlights the capability and familiarity of academics with the pressures and needs of the academic research community (Drennan 2018, 3). Defining the norms of recruitment for RMAs can better structure these needs and cater them to the context of the specific institute.

To better lay down the norms for recruitment of RMAs, the overheads usage policies also need to be clearly defined at the institutional and funding bodies' level (Ayyar and Jameel 2019). Costing of grants for overheads, in general, has been a particularly complex and widely debated issue worldwide; clearly defining the institutional level policies for allocation of cost to RMA recruitment shall be a crucial step towards the overall optimal use of the allocated overheads cost. We have also covered our policy recommendations on overhead costing extensively in a previous publication that can be found in the 'indirect costs framework' section of the policy brief [Rethinking Research Funding for India's Higher Education Institutions](#).

CONSULTANCY & CLUSTER MODELS

In an HEI-based STEM research ecosystem, each university has a finite amount of resources to fulfil the pressing academic and research needs of the campus. The status and research reputation of an HEI exacerbates this resource crunch, with state and local universities often facing the challenge of meeting its research ambitions with very limited funding. The concept of a 'Cluster' has emerged in this context to partially counter the restrictions imposed on institutions while managing their academic and innovation needs.

A research cluster, a multidisciplinary team of faculty members from multiple departments focused on a common theme, provides a mechanism for leveraging regional strengths, sharing limited resources, and providing opportunities for both faculty and students (Huenneke et al. 2017).

Given that Research Management as a discipline is severely dependent on the willingness of the parent institution to dedicate resources for an additional

wing, the notion of 'shared resources' becomes very significant. Presently, many universities that look to establish RM offices can evidently find the '**proof of concept**' and its success in several successful research universities in the country. The successful implementation of RM in some universities paved the path for sharing of knowledge, resources and mentorship for the next generation of RM offices.

CASE:

Early Efforts by India's First Research Development Office

For instance, the Research Development Office at the National Centre for Biological Sciences, as its initial objectives, created a comprehensive database of funding opportunities available to STEM researchers, covering the funding body, eligibility, duration of grant and so on (NCBS). Since the drafting of that database till date, it has been kept open for all and not restricted to the campus researchers alone. Because it was among the initial initiatives of its kind in India, the knowledge-sharing aspect became very crucial for the nascent development of India's RM ecosystem.

Several pioneering research managers have taken up the responsibilities of guiding newly emerging RM offices either in their independent, institutional ways or through the India Research Management Initiative (IRMI). As an organised group of all stakeholders relevant to the development of RM in India, IRMI is a manifestation of the *shared resources* principle. However, IRMI is not alone.

The proposition of HEIs coming together to form a Cluster gained prominence when a few successful cluster models in the country inspired the establishment of similar structures by government funding agencies. For instance, the Chandigarh Region Innovation and Knowledge Centre ([CRIKC](#)) was India's first 'knowledge cluster' that encouraged institutions in other parts of the country to come into similar arrangements with neighbouring HEIs (Kachhava 2013).

The CRIKC, headquartered in Panjab University, aims to facilitate efficient interactions for academic, research, administrative and infrastructural grounds on issues of regional and national significance. The Chandigarh region has a high density of educational institutions, and CRIKC acts as a common platform through which 30 HEIs can collaborate, partner, participate and innovate collectively (CRIKC). The success of CRIKC highlighted the idea's effectiveness, resulting in the establishment of several other clusters by the Office of the Principal Scientific Adviser and the Department of Biotechnology (DBT) in the country.

Biotech Science Clusters:¹ Bengaluru, Faridabad, Kalyani and Pune

Science & Technology Clusters:² Pune, Hyderabad, Delhi-NCR, Bhubaneswar and Bengaluru

The Cluster Model is one key manifestation of the shared resources and knowledge principle. Through this, “formal umbrella structures” are created with the intention of promoting synergy among existing S&T HEIs by envisioning a “shared ecosystem” (Office of the Principal Adviser to the Government of India 2022). The goal is to encourage multi-institutional projects within a cluster with the collective use of infrastructural resources via the Indian Science Technology and Engineering Facilities map (I-STEM), and emerge as a solutions provider for local issues. The envisioned idea of the S&T Cluster not only seeks to enhance academic and research productivity of existing HEIs but also improve the impact of research conducted by forging a tangible link between scientific innovation and social change.

For example, during the COVID-19 pandemic, the Bhubaneswar S&T Cluster acted as a bridge between researchers and startup companies, encouraging the development of several research-based solutions to issues such as recycling PPE kits. Similarly, the Pune S&T Cluster assisted the Pune Municipal Corporation by conducting trend analysis of the spread of the pandemic in the city (Office of the Principal Adviser to the Government of India 2022).

Given the immense potential of Clusters, the role of research management becomes even more poignant. The report utilises the case of National Centre for Biological Sciences (NCBS) and the Bengaluru Life Sciences Cluster (BLiSC) to highlight the impact of a shared RM office to improve the efficiency of a cluster. The BLiSC is headquartered at NCBS, where three other member HEIs seek and receive support from the established biotech research infrastructure and research management facilities at NCBS.

1 List of Biotech Science Clusters in India: <https://www.indiascienceandtechnology.gov.in/programme-schemes/research-and-development/biotech-science-clusters>

2 List of Science & Technology Clusters in India (February 2022): https://static.psa.gov.in/psa-prod/psa_custom_files/S%26T%20Cluster%20Report%202022_Website.pdf

“ Even though there are different institutions that are part of the same cluster, the shared Research Development Office caters to the scientists’ requirements, keeping in view the specific rules of the member institutions and their supporting nodal ministries. The common RDO is especially relevant for managing pan-cluster institutional research efforts. Researchers on campus are aided by a central office that is staffed with professionals who are scientifically trained, understand the processes and can speak the language of administration. ”

Dr. Vineetha Raghavan

Head, RDO - Grants and Research
Collaboration, National Centre for
Biological Sciences



** The views are personal in nature and they are not represented or warranted on behalf of/by her place of work*

While NCBS undertakes fundamental bioresearch, Institute for Stem Cell Science and Regenerative Medicine (inSTEM) conducts translational-based research and Centre for Cellular and Molecular Platforms (CCAMP) is the innovation-centric wing of the cluster. Although the cluster model seems an ideal solution for many institutions, the actual implementation can be tricky. Governance issues such

CASE:**Research Development Office, Bengaluru Life Sciences Cluster - Shared Resources for Research**

The Research Development Office at BLiSC functions as a liaison among all stakeholders across member institutions, providing a common platform for interactions, problem solving, and capacity building. Given that the nature and mandates of the member institutions differ widely, the office takes into consideration the individual restrictions of each institution. It also faces challenges owing to the diverse set of funding agencies supporting its member institutions. For instance, NCBS receives core support from the Department of Atomic Energy while the DBT provides core funding to inSTEM (NCBS RDO).

As the central RDO, it remains mindful of each organisation's varying rules, requirements and funding regulations. Furthermore, the RDO also facilitates multi-institutional projects within the cluster, with their knowledge and systems to cater to collaborative, financial and administrative requirements of the member institutions.

as deciding on a cost sharing framework, and differing institutional mandates can pose considerable challenges for a newly emerging RDO. Nonetheless, the model also facilitates collaborative work and aids in the spread of RM facilities. Research in a cluster is driven by the specialisations and mandates of the individual institutions thereby promoting multidisciplinary and multi-institutional projects for innovation.

Additionally, the nature of the cluster would dictate the priorities of the RM office. If the cluster has a very strong innovation arm, RM would include offices like licensing and IP cell. If a cluster emphasises on contract research and corporate collaboration, then there will be support required to engage with the industry and build industry-academia collaboration. For all of this to come to fruition, active involvement and backing from the individual HEIs and their leadership is observed to be very important.

ROLE OF THE LEADERSHIP

One of the major challenges of setting up a research & development office is leadership support combined with adequate financial support. The IRMI initiative has provided some impetus for institutions to think about research management to add long-term value to their research. Its grants and fellowships have particularly been helpful in providing financial support for setting up research management structures and activities at some institutions. The success and impact of the

existing models of RM have also attracted interest from institutional leaders across the country.

A mix of top-down and bottom-up support has been observed as the ingredient of success for RDOs across the world. It is essential to understand that while leadership support is crucial, it must be married with trust & participation from the researcher community. The leadership may have a broad vision, but it is necessary to define and create a clear path to turn that vision into a reality. A roadmap is essential to meet the goal. Successful examples of a clear vision and good leadership support have resulted in the setting up of pioneer RDOs at the Bengaluru Life Sciences Cluster and the Translational Health Science and Technology Institute (THSTI), to name a few.

CASE:

Leadership and Vision: Success Story of India's Early Initiative for In-institution Research Development Office

The RDO at the Bangalore Life Sciences Cluster—known to be among the first of its kind in the country—stemmed from the vision of Prof K Vijayraghavan and Prof Satyajit Mayor—to enhance the institutions' research to be of a globally competitive standard. The RDO acts as the strategic unit for centrally managing research resource development for the cluster and has helped the institutions attract various forms of competitive funding. The vision of these leaders, combined with the efforts of the deans of the institutions, the administrators and Dr Savita Ayyar, the first research manager at NCBS, led to the start of a collaborative research management system at the cluster. The researcher community at the cluster participated in the shaping of the RDO through its active engagement and working in a collaborative mode with the office.

Networks of the leadership in certain cases have also facilitated the diversification of the research funding portfolio of the institution. It has particularly helped some institutions bring in philanthropic and corporate funding, sources that are now thought to be of increasing importance. The need to move towards a mixed portfolio and not rely majorly on intramural and governmental funding alone is evident. The role of leadership in paving the path for quality research and providing the required research management support to it is thus crucial.

As discussed earlier, the role of the researcher community in making the RDO a success must go hand-in-hand with support from the leadership. Active engagement and continuous feedback from the researcher community within the institutions have helped in need identification of functions of the RDO and simultaneously facilitated a buy-in from the leadership. We discuss the role of the researchers further in the next section on 'Stakeholders and Strategies'.

EVOLVING PRIORITIES

As the needs and complexities of research in HEIs evolved over the years, so did the institutions' priorities for research management. Some institutions initially aimed to find funding sources for their research projects, while others wanted to increase research collaborations with the industry.

Grant Management support has been observed as a key pillar of the research management unit of several institutions. In well-established RDOs, there is a separation of responsibilities among personnel in-charge of pre-award and post-award support. The IRMI pilot by India Alliance in 2018 found that only 9 out of the 31 participating institutions provided support to its researchers at the pre-award stage (Ayyar and Jameel 2019). Many institutions without an established RDO unit provide the limited support of periodically sharing a list of grant opportunities that their researchers can look to apply for. Some institutions have opted for subscribing to/purchasing project management/grant management softwares, while a handful of institutions have also developed such softwares in-house. Examples of the latter remain sparse.

The existence of knowledge transfer and IPR support in HEIs broadly exist in two forms: either a part of the RDO provides this support, or a dedicated cell/centre has been established for the same. These dedicated units (cells/centres) differ in nomenclature and structures, taking the form of 'IPR cell', 'patents office', 'business development office' and 'technology transfer office', to name a few. It must be noted that the extent of support in certain institutions may or may not extend to the facilitation of licensing of the IPR.

The structures of many RDOs have now evolved to provide several other services such as liaising, ethics & compliance, research communication and training (such as proposal writing). Though the examples are few and scattered, some RDOs provide support that also relates to research development and go beyond administrative support. These can include team building, grant writing support, training workshops, critical proposal review, etc. One of the most interesting/new functions of an RDO was observed during our primary research at Ashoka University. The following case elaborates on the same.

CASE:**Research and Development Office, Ashoka University**

The Research and Development Office (RDO) at Ashoka University acts as a central unit for all academic research that takes place at the university. Envisioned and established under the leadership guidance of Dr LS Shashidahara and Dr Anirban Chakraborty, the RDO promotes multidisciplinary research and academics. The operation areas of the office have been divided in four parts - “extramural grant management, research infrastructure management, research scholar’s management, and research communication” (Ashoka). Apart from the leadership, the office has 3 RMAs for pre and post award extramural grant management, 2 RMAs for research infrastructure management, 1 RMA for research scholar management and 1 RMA for research communication. The RMAs currently engaged with the RDO come from diverse academic backgrounds and the roles and responsibilities among them have been clearly defined.

The research infrastructure function of the RDO has led to the setting up and development of various well-equipped labs and facilities, some of which are unique and interdisciplinary in nature. One such example is the common facility for interdisciplinary research in the fields of Archaeology and Biology.

The scholar management function of the office has facilitated the timely employment of skilled personnel across various departments and research projects. The RMA assigned with this function, also acts as a liaison between research personnel and their respective departments for several purposes. Apart from these four operation areas, the office has recently started conducting training workshops and facilitating industry interactions for the researchers. The office is an interesting case study for the various kinds of roles an in-institution RDO can provide beyond the traditional roles envisioned for research managers in India.



The lack of adequate research infrastructure in resource-constrained universities of India is not unheard of. At times, the cost of procurement of a single instrument/ piece of equipment can go up to several lacs of rupees. Managing this expensive equipment and ensuring its optimal utilisation remains a concern for big and small HEIs alike. One of the five major projects identified under the Prime Minister's Science, Technology and Innovation Advisory Council ([PM-STIAC](#)) is aimed at facilitating access to publicly funded R&D equipment and facilities through a national portal called [I-STEM](#). The need for policy intervention is evident and has been started; however, to create a systemic change across HEIs and ensure participation by a maximum number of institutions, coordination and communication with the research and development offices of the institutions are key. The evolving nature of the RDOs structure to include research infrastructure management also reaffirms this increasing realisation within the HEIs.

Statutory requirements of research ethics and compliance requirements have also been a factor in the evolution of RDOs. In the year 2017, ethical guidelines were released for research conducted with human participants in the fields of health and biomedical research. Typically, Internal Review Board (IRBs) in the institutions also exist to keep a check on compliance with the country's and institution's ethical guidelines for research. For example, offices of research institutions focused on translational research for public health, such as THSTI, have integrated the statutory committees as part of their External Relations & Institutional Development ([ERID](#)) office. This office also provides research management support in the form of functions discussed earlier, namely innovation management (technology transfer and IPR), grants and investor relations and research communication.

The RDOs in India, have thus, evolved significantly over the last few years to suit the context of the HEI, the evolution of research fields and priorities, the change in statutory requirements and the increasing complexity of research funding and innovation management.

The role of and need for a trained research manager/administrator community and good leaders have been extensively discussed in the last few sections. However, the stakeholders involved in creating an efficient research management community extend beyond research managers and institute leadership. This section explores the role and importance of the stakeholders in the current research management ecosystem of India and their potential for the successful implementation of research management.



Chapter 3

Stakeholders and Strategies

HIGHER EDUCATIONAL INSTITUTIONS

Previous chapters of this report have explored in detail the role played by the leadership of HEIs in the establishment of RM offices in India. Backed by ample evidence and examples, HEIs are among the primary stakeholders for promotion of research management in the country. The leadership group at HEIs act as the link between newly formed research management offices and on-campus researchers. Further, their confidence is essential since the positive impacts of research management and administration are not immediately tangible. It requires a few years' time to discern the role of RM in improved research efficiencies of the institute.

As the primary entities undertaking research in India, HEIs receive financial support at different government levels, enjoy different extents of autonomy, and secure discrete grant funding from different agencies. Since these institutions strive to mobilise their limited resources, several parameters such as the reputation of its research productivity, status of the university, and its sources of financial support, play a role in the most optimal use of resources for research management. To multidimensionally evaluate the role played by HEIs in promotion of RM, this report looks at the different categories of HEIs and analyses the impact of these classifications in the short- and long-term.

Higher Educational Institutions such as IITs and IISERs, classified as Institutes of National Importance, have been faster in utilising their existing resources to establish newer RM structures. Since these institutions form the hubs of STEM innovation at a regional and national level, RM structures were initially developed to enhance the effectiveness of conducting research, thereby ensuring more funding and collaborations with national, private and international agencies.

On the contrary, state universities are often not as research-driven as an outcome of the funding crunch. Oftentimes, two options have been observed for resource-constrained and state universities to establish RM facilities: entering into a cluster to pool in resources or seeking consultancy-based support from other HEIs. For example, Ashoka University, with its state-of-the-art Research & Development Office provides consultancy services free of charge to other HEIs who are looking to create RM structures.

In the case of private universities such as Ashoka University and Manipal Academy of Higher Education, they have enough autonomy and resources to hire the best of the talents from the market pool and become leading examples of organised research management services in the country. They also have the option to expand the scope of RM beyond grant management (observed to be the fundamental priority) to cover fields such as research infrastructure and personnel management, research information management and scientific communication and outreach (Ashoka University).

Institutions such as NCBS and THSTI also highlight the importance of autonomy for an HEI while deciding its financial obligations. With substantial core support from government agencies and secondary sources of funding from the corporate and philanthropic sectors, institutions have used their autonomous status to fund ambitious projects on unconventional themes.

Given the wide geographical, autonomy, financial and subject matter extent of HEIs in India, any platform that can bring this diverse group of stakeholders together can become highly influential in developing research management facilities.

While alliances such as the India Research Management Initiative, discussed later, continue to provide rare support in the ecosystem, other groups such as the Association of Indian Universities ([AIU](#)) can also play an important part.



“ The landscape in which national and international research grants/ fellowships and contracts are won has become increasingly competitive. Many Indian institutions now are developing a sound academic and research management support base for their faculty and researchers. Without such support, time and funds invested in research are not utilized optimally. The lack of it also risks future growth and sustainability. ”

Dr Anirban Chakraborty
Assistant Vice President - Research & Academic Development, Ashoka University

RESEARCHERS

The support and participation of the research community are crucial to shaping the activities of an institution's RDO. Given that the primary objective of an RDO is to facilitate the research done by the researchers, active communication and feedback mechanism with the research community can help in need identification, enhancement of current functions of the office and the successful implementation of the processes and procedures set in place. Researchers can also play a key role in structuring the performance assessment process (based on key performance indicators set for the RM personnel) and helping in impact assessment of the RDO. This can be done by assessing the role the office played in providing support at various stages of the research cycle and how that links to the successful completion of the project and the final research output. While the RDO would be responsible

for providing adequate support to the researchers, the research community must also cooperate and be accountable for complying with the processes set in place for them. The researchers must understand how the office can meaningfully contribute towards resolving their funding queries, supporting in administration and compliance requirements and dealing with complexities of their grant and technology transfer processes, among some of the other functions played by the RDO. This can be facilitated by the creation of a mechanism for RMAs to periodically connect with the institute's researchers to understand what is working well and what are some areas of improvement. How this loop can be structured well is also something that must be brainstormed while setting up the RDO.

FUNDING AGENCIES

In India, government expenditure on R&D is the major source of financing research & development in the HEIs. Both national and state funding agencies provide basic financial support as well as competitive funding to institutions. This highlights the importance of the major funders of HEI research to be at the forefront of understanding and promoting the provision of research management services. The formers' engagement in the ecosystem may be grounded in guidelines, but proactive interactions among funding agencies and institutional RMAs would remain indispensable to the development of RM.

This shall not only streamline the process of grant management but also facilitate efficient communication and coordination with the grantee institution. As per the comments received from the interviewees of this study, national funding agencies are increasingly recognising the value in engaging with RMAs. It is hoped that the upcoming National Research Foundation (NRF) shall help streamline the engagement of research funding bodies and HEIs through RMAs, facilitating a larger change in the research ecosystem of the country.

Several international agencies are already familiar with and appreciate the value of engaging with the RMAs of the grantee institution. They also have set procedures and protocols that align with the form and extent of engagement with the RMAs and researchers for the project. Although the share of corporate funds flowing in for HEI-based research is low in India, most large organisations also have a favourable view of having professional, trained personnel for research management of the research project.

Some funding agencies' grants specifically state the precondition of an engagement of a trained RMA to facilitate coordination with the funder and manage the research grant. In these cases, established RDOs are equipped with the necessary contextual knowledge of the institution's rules and regulations while being skilled to execute the required compliance and management tasks associated with the said projects. This has resulted in some institutions following the funders' node in creating research administrative positions equivalent to faculty positions.

“The engagement between RMAs and funding agencies has only increased in the past years. International agencies immediately recognise positions, and they understand how to engage with me. The same level of recognition has started coming from national agencies as well. They know what the workload will be, communicate important information and instructions to investigators through the RMA. Even for offices that have recently started, once there is an identified point of contact, the funding agencies do actively engage with them. The next step is to validate such efforts at an institutional level.”



Dr Vandana Gambhir

Head - Grants Office and IPR Cell, IISER Pune

**The views are personal in nature and they are not represented or warranted on behalf of/by her place of work*

CASE:

Department of Biotechnology (DBT) and its Initiatives

The Department of Biotechnology (under the Ministry of Science & Technology) and the various bodies under it were one of the early identifiers of the need for institutionalising the provision of research management support to researchers of the country. Emerging from the complex ethics and statutory compliances, DBT has supported institutions and clusters in establishing RDOs to address their demands. For instance, DBT's autonomous institute inSTEM is an institutional member of the Bengaluru Life Science Cluster and enjoys comprehensive RM support on increasing sources of competitive funding and grant management assistance. Other autonomous institutes of the department, such as THSTI, also followed suit, with a special focus on providing additional institutional support of ethics and compliance-related support to its researchers, given the institute's unique focus on facilitating translatable research for the public health ecosystem of the country. The independent organisation, India Alliance, co-funded by DBT and the Wellcome Trust, is currently leading the conversation on RM in India and actively creating a positive change through its India Research Management Initiative's ([IRMI](#)) grants, fellowships, and events.

ALLIANCES, ASSOCIATIONS AND SOCIETIES

Networking platforms and organisations/aggregates (alliances, associations and societies) have emerged over the years around various parts of the world—becoming the collective voice of the research managers/administrators (RMAs) community. The International Network of Research Management Societies (INORMS) was established in 2001 with the specific purpose of bringing together these organisations from different countries, facilitating the internationalisation of the practice of research management and allowing the exchange of best-practice ideas. INORMS has a dedicated Research Administration as a Profession (RAAAP) Taskforce that is tasked with surveying of the research management scenario globally year after year. The members of INORMS include both intercontinental, regional and national level associations from all over the world.³ India's participation in INORMS till date has largely been limited to small delegations attending the conferences, the number of delegates for which have been increasing over the years. Dr Savita Ayyar, on behalf of India Alliance, has also been one of the speakers at a session in the conference.

IRMI in India has created a network where the RMAs of the country can connect and share best practices while also working towards capacity building for research management as a practice and profession in Indian institutes. The initiative has helped build a community of RMAs through its workshops, conferences, and the official 'IRMI network'. As per some of the RMAs in this network, IRMI has helped provide a platform to them where they can discuss solutions to problems, understand new forms of enhancing the RM services of their institution and create visibility for the profession. WhatsApp groups have also emerged from the workshops conducted by IRMI, which now serve as an informal platform for the RMAs to get quick responses to their questions. Video conferencing through Zoom and other similar platforms has facilitated this further. Through its travel grants, RMAs have received exposure to international conferences and access to training programmes and modules from other countries. This has been helpful for the RMAs who would have otherwise not been able to apply due to insufficient funds. The conferences of IRMI have also provided the platform to private service providers to showcase their relevant software for financial and project management that would be relevant for enhancing the RM services.

Organisations and initiatives such as these have provided a common platform and an opportunity to upskill/enhance the RM practice at the concerned institutions around different parts of the world. In addition, such associations can undertake coordinated efforts to share best RM practices and ensure that these facilities are not isolated in select HEIs alone. The Southern African Research and Innovation Management Association (SARIMA), for instance, published '[A Handbook for Southern African Research Management Offices](#)' that covers a detailed number of information and guidelines on a range of specific topics related to research management functions. Some associations, such as the Australasian Research Management Society (ARMS), run several accreditation programs and awards for people who have made a distinguished contribution to the region's research management field.

3 Full list of INORMS members can be accessed on <https://inorms.net/membership-directory/>

POLICYMAKERS

The growth of research management in a country depends on its research growth. As the research performance, expenditure and overall complexities increase, the need for research management become more evident and important. Policymakers are key stakeholders in this ecosystem who can facilitate the fostering of research through a stronger commitment to optimising investment and creating enabling policies. The link between policymakers and researchers is thus essential to understand. Evidence-based and informed policies are supported by research that provides practical solutions. Researchers, on the other hand, want 'enabling policies' for their research environment that equips them with the potential to create an impact through their research.

Research managers have played a vital role in research communication (efficiently and succinctly communicating the output of research) and facilitating the link between the researchers and the policymakers of a country. Policymakers are realising the multiple benefits that research management can have for the R&D performance of a country and have thus started working towards building capacity for the field. However, we still have a long way to go. The Draft Science Technology & Innovation Policy (STIP) 2020 also makes isolated mentions of the need to reduce the administrative burden on researchers. The specific focus required on research management as a profession and policy interventions to build capacity for the same is still missing from the main policy draft. To create a necessary systemic change in this field, a larger vision and roadmap have to be devised by the country's policymakers. National governmental bodies have already started taking steps towards this, and a well-drafted contextualised policy can provide the required boost to these efforts. The policy interpretation of the same by various institutes and bodies would also be as necessary as creating the policy itself. We hope that the national STIP and the conceptualisation of NRF provide this pathway to creating a conducive environment for research.

Excerpt from Draft STIP 2020:

“Formation of a trained management cadre at the national level for planning, assessing, communicating and executing educational and research activities in HEIs and research organisations. Conducive environment will be created by removing administrative and other barriers for talented young people to take up appropriate leadership roles and participate in critical decision-making.”

- [Draft STIP 2020](#)

PRIVATE SECTOR STAKEHOLDERS

At present, the engagement from private sector entities in the current R&D ecosystem of India is minimal, with the public sector constituting a majority of the STEM research and innovation activities in HEIs. Our previous publication, [Research Funding for STEM Higher Education Institutions](#), covers the impact of this trend on research funding and grant management in detail. The forthcoming section of this report builds on these observations to draw a link between participation from the private sector and the development of research management facilities in the country. The report presents and analyses the existing and newly emerging pathways for promoting interactions between the private sector stakeholders and research management structures.

Chapter 4

Role of Markets

In order to encourage research management practices in Indian HEIs, proactive engagement of the relevant stakeholders, with due consideration to their varied interests and needs, is crucial. Of these, this section deeply explores the existing lack of adequate private sector involvement in the HEIs-research ecosystem and how promoting the same is intrinsically linked with the development of research management facilities.

In the US and UK, private sector involvement in the STEM research ecosystem of HEIs is very high. In India, however, the public sector remains dominant in the R&D ecosystem (Mehta and Puri 2022). The overall trends of India's private sector participation rates across different parameters portray a disappointing picture. Primary reasons contributing to this circumstance include a lack of incentives and differing expectations between academia and the industry.

Industry and academia are drawn in opposite directions as a result of their objectives that are fundamental to any collaboration. A company's aspirations behind collaborating with research centres and HEIs may be driven by profits, while a university's central goal behind undertaking projects is to conduct path-breaking or ambitious research (Drennan 2018). Research Management structures, as the fundamental body engaged in negotiations, have the potential to synchronise these conflicting aspirations by actualising the vision of common grounds of research.

In general, increased participation of private industries in the research ecosystem would intensify the competition to provide good quality research management services. Additionally, it would equip HEIs with the freedom to choose the most suitable services from a wide range of options, priced according to the demand for the facilities. At present, this is severely lacking in the Indian research system. With more players entering the market, the supply and demand forces for research management would drive further enhancements to specialised services and softwares, thereby assisting the HEIs and RMAs to receive better quality support.

In the long run, alternatives for such research management services would help reduce the infrastructural costs incurred by HEIs while developing and maintaining in-house RM softwares. In the context of capacity building and funding sources for setting up RM offices, currently, several funding agencies of India organise workshops to train new research managers. For instance, the DBT Wellcome Trust finances capacity-building workshops, grants and fellowships awarded through the IRMI Alliance. However, in the long-term scenario, market players can help in reducing this burden on the government by taking up the responsibility of capacity-building through training partnerships with research management offices in HEIs.

Since the process of boosting private participation would be driven by the needs of the universities, their respective research management offices would play a major role. Thus, the report identifies the private sector's role to be immensely crucial and intrinsically linked to the promotion of research management facilities. This section explores in detail the role of markets in the development of research management facilities in Indian HEIs. It also discusses the various pathways for industries and their impact on the development of RM offices via different phases of the research cycle.



Chart 2: Pathways for Private Sector-Research Management Interactions

At the time of collaborations, technology transfers, partnerships and/or sponsorships, RM-like structures in markets become compatible with similar structures in HEIs - thereby highlighting the significance and ubiquity of such facilities in STEM R&D. The following paragraphs discuss certain ways through which increased interactions among markets and HEI-based RM offices can lead to a positive impact.

PRIVATE SECTOR AS SERVICE PROVIDER

Research Information Management Service is defined as the “*aggregation, curation, and utilisation of information about research*” (Elsevier 2021). In simpler terms, RIMS is a well-dedicated framework designed to record all regulatory, administrative, financial and compliance-related information for maintaining databases and impact analysis.

Given the multiplicity of subfields of research and funding agencies’ requirements, combined with the context-specific requirements within the concerned HEIs, one software framework that can incorporate these varying requirements is neither feasible nor probable. Though in-house softwares can pose an advantage in this situation, development of the same is not very common among Indian HEIs. Softwares that are privately developed, managed and maintained

are in a better position to cater to the individual requirements of a university. Particularly, companies envisioning to enter this field have existing models to refer to, highlighting important choices concerning end-to-end or partial research management support for HEIs.

Companies such as Elsevier and Worktribe offer a comprehensive package of softwares that provide end-to-end research management support. On the other hand, companies such as RESEARCHConnect and Grow Kudos provide specific support on pre-award funding opportunities and communications and outreach, respectively.

Given the crucial nature of research conducted, irrespective of the stage targeted, the impact of private sector intervention cannot be understated. For instance, in October 2015, Taipei Medical University became Taiwan's first medical university to implement Elsevier's Pure for research and data management (Elsevier 2019). Before Pure, information was often archived on systems that required manual updates by the faculty on a voluntary basis. This led to obsolete guidelines and the absence of a framework for consistent formatting and storing of information. Resultantly, the overall standing and research productivity metrics of the university were impacted.

A research information management structure allowed them to centralise information on one platform, thereby improving visibility for national and international funding agencies. Further, it collated all information concerning researchers, research projects and administrative data, which has helped them measure research performance and efficiencies (Elsevier 2019).

A similar example also exists in India in the form of Manipal Academy of Higher Education ([MAHE](#)) which has also adopted Elsevier's Pure research information management system to coordinate its research activities across departments and centres. It also goes one step further by collating information about the equipment and research units available for STEM research.

However, MAHE's case is not always possible for other HEIs in India. Universities facing particular issues will not favourably consider foreign RIMS services due to the costs involved and inaccessible follow-up maintenance requests. In particular, softwares developed by Indian companies can look to fill this niche space, given that they thus would be competing against a select few Indian counterparts to supply services against the growing demand for digitisation of administrative systems.

Another advantage for the Indian companies entering the RM service provider space is that they can choose to cover different stages of the research cycle, as per their skill sets. While examples of foreign companies providing end-to-end research management services do exist, startups can strive to provide specialised services that are better tailored to the unique requirements of India's research funding ecosystem. For instance, PATH and Forum for Ethics Review Committees in India (FERCI) collaborated on the development of [CReATE](#)—a group of five software-based solutions for enhancing different aspects of clinical research management in India (Sharma 2018).

In broader terms, such services could include financial management, pre-award support, IPR and licensing and/or Communications etc. For instance, 'AuthorCafe' specifically caters to the research writing process, offering software-based solutions for managing resources and research projects during PhD.

Furthermore, the development of these services by local industries/start-ups would also trigger consumer preference-driven improvement in research management facilities provided to HEIs. For any additions or replacements to be made to the existing systems, due consideration towards the institutions' needs is extremely vital. A common theme that emerged during our stakeholder consultations is the significance of institutional context while promoting private sector involvement as service providers. A research management office would play a key role in representing the policy-enforced guidelines of the institution and the funding agencies. Although the Government of India has identified RIMS as a rising priority through its Indian Research Information Network System (IRINS), a policy intervention from the government would be incapable of addressing and including all the unique requirements of HEIs and research institutions. Therefore, private sector entities tend to become key stakeholders. While deciding on the extent of their services, it must be clear to the companies if their product supplements the existing RM system or looks to replace it.

A few Indian startup companies lead the way in proving the profitability of this space. Over the years, several companies, such as [SFACTS](#) and [Symmetry Infotech Private Ltd](#) have boosted their engagements with HEIs. The IRMI RM Conferences also provide the platform for such companies to connect with potential customers of their softwares and demonstrate their suitability.

TRAINING & SHARED INFRASTRUCTURE

Though RIMS may be amongst the most evident manifestations of private-HEI partnerships, it should not be restricted to it alone. Institutions are beginning to explore other forms of collaborations based on academic partnerships, development of infrastructure and research-based consultancy projects. In this context, RM structures can act as 'facilitators of industry-institute friendships' with their technical, financial and soft skills that would form the backbone of such corporate partnerships.

The Science | Business Innovation Board identifies the near universal emergence of knowledge-driven economy to be a driving factor behind meaningful collaborations between industry and institutes— "*When they work well, strategic partnerships merge the discovery-driven culture of the university with the innovation-driven environment of the company*" (Belfield et al. 2012). To ensure a conducive environment emerges out of this synthesis, active involvement of research management structures is crucial.

Academic Partnerships as pathways of increasing industry-HEIs collaborations can be seen through two lenses. First, short-term programmes devised in collaboration with the industries can provide a vital window for students to receive hands-on mentorship and imbibe the practical implications of their learning outcomes. Secondly, universities can leverage their faculty expertise by designing courses and modules to train industry personnel in relevant aspects surrounding

Science, Technology and Innovation. In the long term, such courses can be made more accessible by increasing HEI-association partnerships that would ensure that institutions' faculty expertise extends to a wider audience.

Infrastructural Development is another way through which industries and HEIs can unite to meet their coinciding scientific necessities. In other words, industries and institutions with overlapping research and innovation needs can create a shared platform whereby infrastructural facilities for high-end and ambitious projects are available for the industry personnel, campus researchers and students.

The growing popularity of these pathways has also given rise to negotiations. Research Management facilities can play a major role in negating the complexities therein, ensuring that interests of all the parties involved are considered during negotiations and safeguarding representation of the same at the time of drafting Memorandums of Understanding (MoUs) and contracts (Drennan 2018).

The options and opportunities secured by IIT Madras to negotiate, build and sustain robust ties with various industries can guide other HEIs striving towards the same. IIT Madras has initiated several "user-oriented M.Tech programmes" to cater to the specific discipline-centric needs of industries (IIT Madras). For instance, it has partnered with industry entities such as Larsen and Toubro (L&T), Tata Consultancy Services and Indian Society of Automobile Technology (amongst many others) to design and conduct academic programmes covering particular domains relevant to the industries. Examples of these include Construction Management, Computer Science and Engineering, and Automotive Engine Technology. Both the HEI and the industrial partner together finalise enrollment of candidates for these courses (Alam, Balakrishnan and Jayakumar 2003).

Apart from these, IIT Madras has also established the [Centre for Industrial Consultancy and Sponsored Research](#) to assist researchers on campus with funding opportunities, grant management, and technology transfers. In particular, it also has a separate set of regulations for industrial consultancy projects, leading the way with its clearly defined rules concerning overhead charges, submission of proposals and utilisation of infrastructure (Alam, Balakrishnan and Jayakumar 2003).

What IIT Madras's case highlights is that universities are aspiring to facilitate collaborations in newer arenas while strengthening the existing position of the private sector as sponsors of HEIs-based research.

AS SPONSORS OF RESEARCH

As the requirements of research intensifies to tackle the growing challenges of our modern world, it has been realised that core fund support from one government funding agency alone is insufficient. It has become increasingly difficult for HEIs to undertake ambitious research projects and cover unconventional funding needs without maintaining a mixed portfolio.

“ It is only now that higher educational institutions are understanding the importance of research development offices with existing models showcasing how professional research management can actually change the funding portfolio. Institutions are realising that they can't rely on core support alone, recognising the need to maintain a mixed funding portfolio. ”

Dr. Vineetha Raghavan

Head, RDO - Grants and Research
Collaboration, National Centre for
Biological Sciences



** The views are personal in nature and they are not represented or warranted on behalf of/by her place of work*

For example, travel grants awarded by government funding agencies come with their set of rules and requirements at the time of application. One such necessity is the advance 12 weeks period (Department of Biotechnology—Travel Support Scheme). Especially since the outbreak of the COVID-19 pandemic, schedules of funded projects—its phases, experiments and systems—have become more ambiguous. Having an independent pool of money sourced from a non-governmental entity assures scientists of funding opportunities. This situation is further exacerbated in the case of research managers who do not have access to sufficient funding opportunities to attend conferences and workshops.

BLiSC receives support from Infosys Foundation under the theme 'Global Connectivity in Scientific Research' that enables member institutions to provide flexible, intramural funding to its students and researchers. It showcases how researchers and research managers benefit from additional sources of funding that can match their requirements without the bureaucratic regulations of government agencies (Krishnan 2016).

Apart from this, local industries can also play a role in meeting the traditional research needs of a university. Panjab University's [Centre for Industry Institute Partnership Programme](#) (CIIP) and [Technology Enabling Centre](#) highlight how management structures can enhance research efficiency and, in turn, create social impact through scientific innovation. The CIIP also leads the way for other aspiring industry-institute partnership wings with its clear guidelines on the division of consultancy fees between the scientists, their parent departments and the office.

In the words of CIIP Honorary Director Dr Manu Sharma, “*The mandate [of Technology Enabling Centre] is to mine the technologies which are already existing in different labs of academia, assess their technology readiness level and showcase it to the industry.*”

CASE:

Panjab University’s Technology Enabling Centre and the Art of Solving Local Problems

The Technology Enabling Centre (TEC) was established at Panjab University with support from the Department of Science and Technology. The Centre maintains a dynamic database that records the issues faced by local industries that can be met through scientific research, and makes this database available for scientists who are searching for topics to innovate on (TEC). However, the TEC’s functions are not limited to maintaining information symmetry alone. Once a technology is developed through academic research exercises, the researchers can return to TEC and share the technology’s availability, price and features with potential buyers (industries).

The basic objective behind the establishment of a model similar to the TEC is to align the needs of the industries with research endeavours in HEIs. Such a system not only improves the overall necessity of conducting research but also envisions the end outcome of a research project - thereby easing the process of technology transfers.

IPR AND TECHNOLOGY TRANSFER

From Panjab University’s case, it becomes evident that an emphasis on technologies developed for resolving local industry issues has created positive effects in the ecosystem. Given that the technologies aspire to cover pressing needs of the industries, the possibility of patents and technology transfer also rises. One can look at the CIIP and the turnaround of IPR numbers of Panjab University in unison: reflecting their focus on commercialisation of technologies, going beyond patent filing and maintaining. There was a 66% increase in the patents filed at Panjab University between 2018-19 and 2019-20 (Hindustan Times 2022). The university ranked first in the Atal Ranking of Institutions on Innovation Achievements, University and deemed to be universities - Govt. & Govt. Aided category (Ovais 2021).

However, not all interactions between industry and academia may be fruitful. The researcher has to be passionate about taking their projects from labs to markets—without worrying about the risks involved i.e. fear of the project sinking. If researchers are able to find such partners for commercialisation, then the

institute may feel more confident in investing its limited resources on patent filing. For instance - IISER Pune's IPR cell strives to understand the inventions, invention disclosures, and whether the institute would like to invest in the development of it and invest in filing the IPR and maintaining it or not.

Similarly, different HEIs have identified their own processes whereby they evaluate if a particular patent can be sustained for commercialisation. In India, there is a steady flow of patent filing in HEIs - some may focus on the maintenance, some may focus on the commercial prospects while some may do it for the sheer numbers alone. CIIP Honorary Director Manu Sharma shared the framework followed by Panjab University that contributes to their high filing to licence-granting ratio.

He advocates for a panel that should check the commercial feasibility of a potential patent and suggest sources interested in buying the licence.

“ An in-institution panel should check if a patent, once granted, can be commercialised. They should suggest who can get the licence. At the initial stage, probable buyers should be identified and the panel should talk to them. In this way, institutions can use their limited resources optimally. ”

Dr Manu Sharma

Honorary Director, Centre for Industry
Institute Partnership Programme,
Panjab University



** The views are personal in nature and they are not represented or warranted on behalf of/by her place of work*

However, another section of research managers believe that it is difficult for the RM offices to negotiate with the industry and judge if a particular project would receive interested buyers. It also becomes the responsibility of the researchers to approach incubators to see if it can be taken to the next stage.

If researchers are interested in taking it to the next level, they have to look for connectors. In remote areas, this may be more challenging, but in metro cities, researchers may not face that level of challenges. Through the technology incubators with business development cell, it can be helped to reach to the interested party.

This divergence of opinion also highlights the fact that research management structures are not restricted to one form alone. It reiterates the idea that these frameworks are derived from the needs of an institution and can evolve by observing similar structures in the industry.

Exceptions and summary

It is not necessary for an HEI to prioritise providing in-house support for Technology transfers and IPR-related support for its researchers. As discussed in the report, the priorities of an HEI are based on its research specialisations and needs. While Ashoka University outsources IPR support given the small number of technologies developed, an institute like THSTI that specialises in Translational research finds in-institution technology transfer support to be indispensable (THSTI Technologies and Licensing Opportunity).

Thus, this section emphasised on the multifarious roles which the private sector can adopt in promoting research management facilities in universities. The above detailed pathways and cases highlight how increased interactions among the two can create a positive impact for the other stakeholders: funding for time-sensitive needs of researchers, universities' impact analysis numbers, giving government agencies the space to focus on social-impact projects more.

Chapter 5

Future Directions

Though the noise around the need for better research management services is increasing over the period, the term 'research management' remains unfamiliar to most Indians, including thousands of researchers. An increase in evidence-based studies of the field and the systemic evaluation of its impact is necessary for this to change. The case studies illustrated in this report also demonstrate the evolving nature and increasing need for research management in the country.

As India progresses in its goal to be a top research-performing nation, the attention of HEIs and policymakers will be crucial in creating a well-functioning research management system throughout the country's institutions. The growth in interdisciplinary and multidisciplinary research provides evidence that in this process of fostering the research environment, we must not restrict support to STEM researchers but also recognise its need in social science research.

The outcome of these efforts shall contribute to increasing the process efficiencies relating to research activities, **embracing new technologies, systemising and automating** arduous and laborious research-related administrative processes. The report released by Centre for Civil Society in early 2022, titled '[Possibilities for Science, Technology and Innovation Policy Reforms in India](#)' has further listed some of the key policy priority issues that must be looked into for "facilitating efficient research management practices" in India (Anand, Basha and Mehta 2022, 25).

For the several research universities which currently operate without a dedicated research development office, international literature has attempted to suggest **methods that universities can adopt while building their in-institute RDO**. The appendix of the handbook by SARIMA for Southern African research management offices, for instance, provides a 4-step process that institutions looking to establish an RDO can adopt (Drennan 2018). We propose that in addition to these 4-steps, given the lack of generous funds with several research institutions in India, they must also take into consideration the budget allocations and number of personnel they would want for each function of the office. Current overhead allocations and intramural as well extramural research grants in the last few years must also be evaluated to get an understanding of the likely amount the institution will be able to allocate to this office.

Evaluation guidelines and timelines must be set for all RDOs across institutions to ensure the optimal use of financial, human and infrastructural resources of the institution. A **benchmarking mechanism for the performance of the office** over the years can aid the evaluation process while identifying the issues that need to be addressed and worked upon by it (Ibid.). Support of policymakers in providing guidelines for setting up such benchmarking mechanisms within the Indian research institutions shall be of immense benefit. Initiatives of benchmarking of offices against other institutions have also been adopted in other countries, the key learnings from which can be used while designing guidelines for the context of Indian RDOs. Examples of such benchmarking programmes include the ones conducted by the Association of Commonwealth Universities' ([ACU](#)) and the Association of Research Managers and Administrators (ARMA) in the UK (ARMA 2020).

RM For Resource-Constrained Institutions

The report has covered the issue of resource crunch and the need for optimal utilisation to establish India's research management facilities in detail. The situation is worse in the case of resource-constrained institutions that are challenged by limited funds, inadequate S&T infrastructure and equipment and hurdles in undertaking sponsored research. For such institutions, while the necessity of

research management facilities remains similar, their ability to actually establish the structures falters. Nonetheless, government agencies such as DST and DBT have initiated programmes to provide core support to such institutions.

Though it has been observed in most cases that a consultant is hired to lay the groundwork of research management practices for a university, it would be erroneous to think that it is a limitation imposed on state universities alone. India's premier Institute of National Importance (INI), IIT Madras, consulted a German experienced research manager while envisioning the purpose, structure, and responsibilities of its industry partnership wing (Alam, Balakrishnan and Jayakumar 2003).

The need for consultants emerges from the dynamic nature of research management itself. Since there is no agreement on the uniform design and working of a research management/research development office, Indian HEIs rely on past experiences of RMAs to draft SOPs and lay the foundational understanding of the office. Given the nature of work involved, having comprehensive SoPs becomes immensely crucial to guide the office, researchers and administrative departments of HEIs. Moreover, to initiate the activities of the research management office, HEIs can look to hire 1-2 people who can fulfil multiple roles, depending on the immediate priorities of the office.

Apart from these internal factors, HEIs can look to collaborate with other institutions in the region and set up a common cluster or research management office. As has been made evident in the report, the shared resources principle has been instrumental in the development of research management facilities across the country. Alongside backing from the funding agencies, it is very important for the HEI leadership group to maintain a broad mindset and provide the full support that newly formed RM offices need.

Vision for the Future



“ Impact of Research for a healthy life became more compelling to the public during the pandemic. ”

Vidhya Krishnamoorthy
Grants Coordinator, Translational Health Science and Technology Institute

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The outbreak of the COVID-19 pandemic intensified the emphasis laid on India's STEM research ecosystem, giving rise to discussions surrounding potential provisions, research management systems and reforms that can bolster research productivity and impact in HEIs. Though triggered by the pandemic, the attention

on research management is hardly fleeting. A majority of the stakeholders interviewed for this project identified the present circumstances suited for the promotion of research, and in turn establishment of research management structures, across the country.

Strengthening the links between HEIs and research would contribute towards establishing research management facilities, the two not being mutually exclusive to each other. Therefore, this publication hopes for further growth of HEIs-based research through research management support to scientists. Furthermore, we envision that this growth is supplemented by contentment—brought by promoting research management as a profession and recognition of their contributions to STEM research irrespective of their educational background and responsibilities within RM.

During our interactions with stakeholders, a common dream that frequented was the need for institutionalisation of research management. The report has discussed in detail the significance of the same on the overall position and importance of RM in the research ecosystem. Thus, on an internal front, it is important for research management offices that are still in nascent stages to establish systems in place, with the help of instruments such as SoPs, to ensure clear delineation of responsibilities, chain of command, prospects of growth in the profession within the office and trust-building with researchers and HEIs.

On an external front, increased efforts towards recognising research management offices as legitimate points of contact are very crucial at a national level. Such an approach looks to validate the mandates of the research management offices and facilitates better response towards their work. In addition, the pandemic has provided the impetus for innovations that transcend beyond academic laboratories and make an impact on the national and private sector priorities. This shift in our goals calls for multi-institutional efforts, multidisciplinary research endeavours and multidimensional support to researchers.

At the policy level, the New Education Policy 2020 reflects on this vision and proposes its Multidisciplinary Education and Research University (MERU) model to suggest ways of incorporating the same in our research priorities at the institutional level.

Excerpts from National Education Policy 2020 :

“..... to end the fragmentation of higher education by transforming higher education institutions into large multidisciplinary universities, colleges, and HEI clusters/Knowledge Hub... Moving to large multidisciplinary universities and HEI clusters is thus the highest recommendation of this policy.”

“Model public universities for holistic and multidisciplinary education, at par with IITs, IIMs etc., called MERUs (Multidisciplinary Education and Research Universities) will be set up and will aim to attain the highest global standards....”

Conclusion

CONCLUSION

This report aims to provide a detailed evaluation of the evolution, present scenarios and future potential of India's research management ecosystem. It proposes certain features of the current status of research management in the country, and identifies the relevant entities involved in its development. Among these, the private sector shows immense unexplored potential for contributing to the expansion of research management services, a common need for innovation, and shared training and infrastructural requirements. The future directions envisioned in this document necessitate well-devised plans for boosting engagements via policy intervention, private sector interactions and support of external alliances.

Given the immense potential of research management in enhancing India's STEM R&D sector, it is critical to understand the peculiarities of this ecosystem and adapt existing models of project management to suit the institutional and funder mandates. With insights drawn from stakeholder consultations, the report seeks to accurately represent those peculiarities of research management facilities in Indian HEIs. It underscores existing success models with the aspiration of supplying 'proof of concept' that would encourage other institutions to similarly provide project management, and administrative support to their researchers.

Thus, this report strives to cement the position of research management in India's institutional discourse as an enabler of a conducive environment for research activities in the country. The role of a scientifically trained project manager has become increasingly evident in today's time as the need for S&T innovation, funding, social impact and the complexities therein, grow. Recent and upcoming government measures for promoting research productivity should be matched with a motivated spread of research management facilities to enable researchers in extending the impact of their projects and propel towards scientific progress and advancement.

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CENTRE FOR CIVIL SOCIETY

A-69 Hauz Khas, New Delhi – 110016
Phone: +91 11 2653 7456 | Website: www.ccs.in

