

Research Asset Creation (RAC) Model for PhD Awarding Universities in India



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Abstract: Importance of higher education and research is becoming more prominent and admission for PhD is increasing year by year in India. Most of the time Research done as part of PhD ends with the submission and acceptance of thesis in Universities. This research future work or extension work might be picked by other PhD candidate in the same or from the different Universities but not sure when it will happen. Also not sure the research completed has achieved its end objective and University is fine to stop that research after spending so much of time and resources of University. This paper insists on continuous research with PhD candidates every year in Universities until the completion of research and scope for reducing the waste of resources and time. This paper considers the importance and effectiveness of Indexing parameters, Indexing agencies, review methods, Journals and relevant concepts. Considering the usefulness and facts of the same to research community building a standard process with procedures to control quality, performance and original research in place, I have built a Research Asset Creation (RAC) model for universities offering PhDs in India by making use of University level Indexing, Indexing parameters, Inter and Intra University peer review methods and University Journal as magazine and as well as Indexing agency. Research cannot be considered just for the award of degree. There is a need for making use of research, resources of University and time spent on research till the objective of the research is accomplished. This can be accomplished by adopting Research Asset Creation model. Complete details of the model, components of the model, implementation, its benefits and usage is discussed in this paper. This is a generalized Model and fit for all Countries which are looking for effective use of research and resources in a progressive manner.

Keywords: Research, Research Asset Creation Model, University, Research paper, PhD

I. INTRODUCTION

In India higher education is getting more importance in recent years with more and more people going for research [1] and [2]. Having many universities and resources, concern is about the quality and plagiarism in research. Also with the number of existing Universities and resources there is a strong motive for bringing in quality, innovation,

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developing new theories and new discoveries to tackle the existing problems of the world and strong future. In order to control that a systematic centralized model is required. Also it should take care of creating a research asset which is very much required to avoid the waste of resources and time involved in it and bringing the maximum value out of it with continuous research.

Research at international level going at a very fast pace with huge diversification and in distributed environment. However lot of efforts done at various levels to bring original work of it in the form of Journals and for the future work. But at the same time efforts equal or more are done at University level for the research. Lot of resources working on research will end up with Thesis in University database. Although he/she get PhD, what remains as question is the effort of research and time by the resource of faculty and Student researchers is part of the progressive research in nature and helping the Society. At the international level we have the system like conferences for submission and presentation of research papers, review methods, indexing, Journals and ranking system to evaluate and continue research in the seems to be right direction path. The percentage of research get into this system is low compared to the overall research being done all these years. Need of the hour is to build system at University level keeping the vision of system at international level which makes use of the most of research resources and time for effective and efficient research effort.

II. EXISTING SYSTEM SCENARIO

As per the news on 3rd June 2019 in Times of India newspaper [1], UGC (University Grants Commission) is trying to assess the past PhDs (Doctor of Philosophy) for quality. Also in that it is mentioned “Lack of a centralized record system of research topics being pursued by scholars is the reason behind increasing PhDs” and “Many times, scholars in different parts of the country are unaware of similar research bring conducted elsewhere, that leads to identical studies. This has led to an increase without any value addition” In order to find solution for the above said problem and also considering the increase in number of PhDs enrollment, there is a need to build a strong quality oriented research System. Over 2 lakh PhDs awarded in last 10 years [1]. The efforts of the large number of PhD Scholars, Universities and the time should not go in vain for just the sake of the award of the degree. Every single resource must be used to build strong nation with future prospects. No work should go in Vain.

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The focus should not be on the success of the research rather being the quality of significant work done during the tenure of the PhD work for every individual even with no result of Journal papers.

Below table Figure 1 and Figure 2 shows the PhD awarded information and number of Universities growing in India taken from the Times of India newspaper [1] and as per the AISHE 2017-18 (All India Survey of Higher Education) report from MHRD (Ministry of Human Resource Development) link [2].

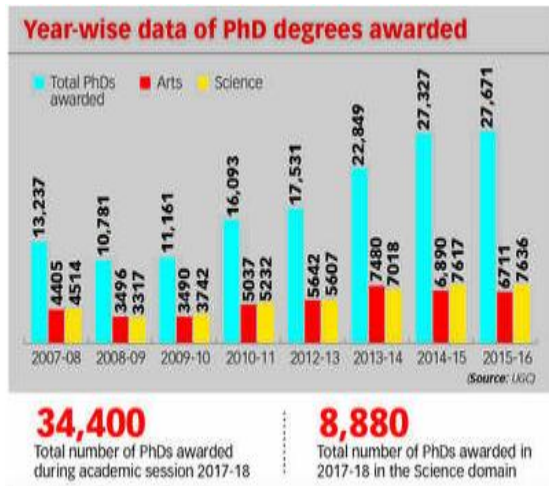


Figure 1: Total PhDs awarded from 2007-08 to 2015-16

Major University Type	Number of University				
	2013-14	2014-15	2015-16	2016-17	2017-18
State Public University	309	316	329	345	351
State Private University	153	181	197	233	262
Deemed University Private	80	79	79	79	80
Institute of National Importance	68	75	75	100	101
Central University	42	43	43	44	45
Deemed University Government	36	32	32	33	33

Figure 2: Number of University growing from 2013-2018

III. NEED FOR RESEARCH ASSET CREATION (RAC) MODEL

Considering the above facts from the existing system we have a large number of resource in terms of PhD aspirants, Universities, Faculty and time. Building a system which can make efficient use of these resources in creating the research asset is the need of the moment. Existing various problems in Society, Industries, development work all and all most of the time need a new breakthrough to address it. Research has the highest capability of solving the various existing issues in the world and change in right direction, building nation through intellect and building economy. If all the resource efforts put in this direction we can create a great asset for the nation and entire human community.

IV. RESEARCH ASSET CREATION (RAC)

Research done in Universities should not end for the particular student awarding PhD. In order to do that University Should create a system. This system should take care of the objective and progressive of the specific research over the years with as many feasible PhD students it requires to accomplish the objective. This objective of research may change or extend or may lead to new research itself depending on the progressive of research and its findings focusing research towards finding breakthrough and new discoveries. In order to achieve this we need to treat every research as asset and start work on building the same. With such interest Research Asset Creation (RAC) is built and the main component of RAC is "Upaper/Uarticle".

A. Upaper/Uarticle

The paper or article created out of the significant amount of work done during PhD by each researcher, I am giving a new name to it as "Upaper" or "Uarticle" where "U" stands for "University". The collection of "Upapers/Uarticles" is the core component of RAC of the respective University. This is done in order to avoid confusion or any deviation for the research community in submitting their research paper to National/International conferences. They remain as same as it is.

B. Building blocks of RAC in each university

1. Research Focus list at University level.
2. Research Uarticles at University level- created out of the work carried out following the International System peer review methods and indexing at University level.
3. University Database repository for Uarticles with indexing parameters.
4. Research Uarticle linked Thesis database maintained at University level.
5. University Journal as magazine and as well as Indexing agency.

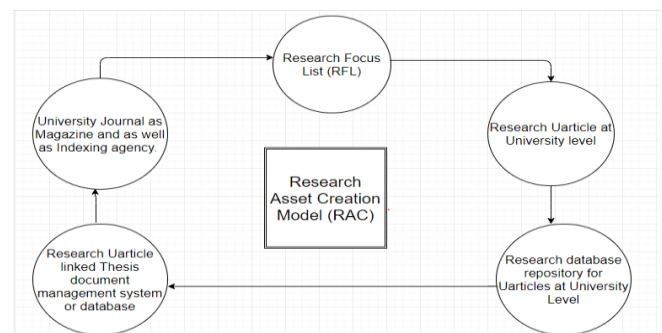


Figure 3: Research Asset Creation Model (RAC)

This RAC model helps Universities to maintain repository of Uarticles, thesis, Research focus list and continuation of research. This should not be treated as the paper submission for the International Conference or the Journal or for the Indexing agencies. That process will be carried out in a usual way as before.

However any Uarticle/Upaper can be submitted to any conferences and can be published in any Journals.

1. Research focus list (RFL) at University level

Research focus list focusses on

- Solving existing real Problems in any discipline
- Working on predicted future problems
- New Innovation, theory and discoveries.
- Betterment of any working solution

Experts in the University form a research board should work on preparation of Research Focus list and initiate a research work in their respective domains after finalizing Research Focus List. Research focus list of the universities gives the broad view of the Research vision to all. It plays a role in inspiring students, other Universities and Public to follow on the research being carried out.

Regarding PhD Research proposal, Universities should have an open end in accepting both research proposal from the Research Focus List and as well as aspiring Students with their own promising research proposal. Some criteria may include below points for the selection.

- If aspiring student proposal is in line with University research or somewhere around which is helpful for university defined research focus list.
- For students who are looking for the topics to research can opt from the research topic list available in the RFL if interested.
- On the other hand if aspiring student proposal topic is not in University list and if it is promising we can add that to the RFL and initiate the research work.

Research focus list may have the ongoing research which need to be continued. This leads to continuous research which is required. For example if you consider any corporate industry employees in team works on a Project/Product over the years and contribute to the industry business. If an employee quits, new employee is hired and work will continue which is a requirement in industry to continue their business. In the similar lines research is an asset and we should not stop once PhD is awarded. Research done at the University College and under the Supervisor capable of handling it as they already worked on it rather than leaving to the rest of the world as future scope of research. If we leave the future scope to the world, it may be continued by others or may not be. Also it may be continued after so many years. Due to this the research effort suffers. Aim of the research is that we initiated research to continue until it reaches its result with no more or little scope for research for future.

2. Research Uarticles at University level

Whenever significant amount of work is done in research, article should be created out of it and it is called Upaper or Uarticle as already mentioned. These Uarticles should go through standard procedure at University level for the acceptance that is reviewed by the editor at University level and peer reviewed as per the requirement with in University or from the other University. Here we can make use of the existing peer review methods. Post evaluation eligible Upapers or Uarticles treated as research assets and will be stored in database. These Upapers or Uarticles can be

presented at University level/International conferences as well as other Conferences. Irrespective of the Paper selected or not in any conference, we have the Uarticles for the significant work done at University level.

3. Research Upaper/Uarticle database repository at University level

Research Upapers/Uarticles accepted will be stored in University database repository with indexing parameters. Whenever research is continued in the University it can be cited while continuing the research. This database is visible to the public and may be other University students look for it and might get inspired to continue research. Also other University may want to collaborate for the research. Since this is visible to all which will give more recognition to the researchers and as well as the University. Chances of recognition, Collaboration, Industry projects, funding and many advantages and future prospects are associated with it.

Also depending on the research Uarticle, University can decide and introduce paid and free Uarticles to access which can become revenue system for University.

4. Research Uarticle linked Thesis database

All the research Uarticles at University level is linked to the corresponding thesis database with proper security and authentication which helps for easy access, retrieval and reference with permission. Thesis Report maintained separately as it will have the complete details of the research work. To access the same appropriate permission and level of authentication required as per the University policy and process. This can also be made as restricted access with free and paid thesis depending on the University expert's decision.

5. University Journal magazine and as Indexing agency

Every year Upapers/Uarticles created for the entire year is published through University Journal magazine. This can be shared with all important stakeholders, media and with all the other University. This gives visibility of the amount of work done and focus on building more upon that.

This system creates Indexing agency and Journals at University level. One way it become easy for Scholars to understand paper submission process, review methods, indexing and Journals at the University level under this model and with this exposure it helps them to compete easily at the international system with more matured way. This system encourages for the highest quality and original research work and Competition among Universities. This system respects time and expects efficient use of resources efforts and build upon it. If the same model is replicated in all Universities, the overall outcome from all the universities is assumed to be more worthwhile than the outcome under existing system. Meanwhile this system helps to build communication between Universities, collaboration for the right and common cause. With wide variety of options opening up, we can imagine the impact and worth fullness of research.

V. IMPLEMENTATION ASSUMPTIONS

With the availability of technology, implementation and maintenance of RAC model is very much achievable.

The building blocks are defined such a way that itself provide the larger view and implementing the same require very good exercise considering the various domains, disciplines and relevant research topics. While implementing the RAC model, Software application design and database design from high level to low level to be done considering various factors like number of colleges under University, various disciplines, relevant topics for research, infrastructure, student management, article management, thesis management, parameters assessing relevant research evaluation, citations, indexing parameters, ranking, review methods, ranking system and solution should be reliable, flexible and scalable. Proper authorization, authentication and security should be built around it.

Developing this software should be taken as open source project as the same can be used by all the University. However if Government takes the ownership of building it, then it can enforce to all Universities to use the system. This will save time, resource and effort of each University developing of its own RAC model. I leave it to the Universities decision to use the open source to be developed or if it wants to develop on its own. It is left to University's decision to make its own RAC model software to use it by other University or to sell by making it for commercial purpose. Mobile App can also be developed to access the same through Mobile in all the platforms. Research relevant information education, books and blogs can also be implemented along with it. Research community social media can also be integrated to this RAC model for networking and communication among researchers. However these are all extension to the RAC model and the first version to be developed is the RAC Model. The extensions mentioned gives the immense possibility of greater vision of RAC model and its capabilities.

VI. INTERLINKING OF UNIVERSITY RAC'S AND CREATION OF MASTER RAC

With paid and free version of articles, University can have interlinking of their RAC's at research article level for the benefit of their Students, faculty and Research Scholars. This encourage Universities to come closer and collaborate for the common cause. With this interlinking, Students and faculties can access the Upaper/Uarticle database of other interlinked Universities. This is very helpful for research community to find the research work to continue of their interest in future scope and avoid duplicate research work. Master RAC can be created at University Uarticle level interlinking all university under the Government department "UGC-University Grant's Commission" of India. This master RAC has all the Upapers/Uarticles of Universities of India. In the similar way other countries can implement the model at University level, interlinking of Universities within the Country and Master RAC. If this model is implemented in more than one Country, it is worth to link at Master RAC level between Countries to fetch more benefit out of it. This increases the global presence of the research work being carried out.

VII. BENEFIT OF RAC MODEL

The major advantage of RAC model is with today's available technology, it can be easily implemented with less challenges. The investment to build this system is worth because of its various benefits. In today's scenario Knowledge is health and data is wealth. Indirectly RAC will build enormous amount of intellectual knowledge and data. Further various statistical analysis can be done on the research trends using the available data with which useful insights can be derived, which might be useful for the University to focus more on the specific research for the future with more expansion of resources which benefit everyone. It attracts funding and good research lead to more revenue to the system. More revenue inspires Universities and Government to come up with various sufficient Scholarship for PhD and Post Doctorial research students to support. This indirectly inspires more and more students to take up higher education which is a requirement for the nation. The cycle of benefits and interdependence goes in parallel. Few of such benefits are pointed out here below.

- High value creation, Knowledge creation
- Efforts of years of Supervisor and Research Scholar will not go in vain
- Students and Researchers get more benefits and knowledge
- Efficient use of resources
- Benefit to Society
- Problem Solving, Innovation leading to bridge connecting to Industries
- Recognition to University, Faculty and Students
- Continuous Research motivating rest of the world
- Research Community building
- Organized way of research system having control on the research quality and content
- Inter university/College research collaboration
- Attracts Research funding

VIII. CONCLUSION AND FUTURE WORK

This paper mainly concentrates on continuation of research in Universities until the objective of the research is completed. PhD admissions every year has a great contribution towards this as it helps research to keep going year on year till the completion of research. This way the PhD resource, time and University resources can be utilized efficiently and helps in achieving higher goals for the University and as well as the Nation. This can be achieved by implementing proposed Research Asset Creation (RAC) model at Indian Universities awarding PhDs for creating a system to control quality, motivating for original and continuous research with minimizing the waste of resource, effort and time put on research. The Core component and building blocks of RAC is discussed. Interlinking at University level and creation of Master RAC is discussed. Interlinking of Master RAC between Countries is also discussed.

This is more of a generalized model and the same model can be implemented in all Countries where they are having similar issues as India and want to work towards progressive research and creation of asset out of research. Benefits of RAC is also discussed which definitely help research community and nation. Future work on this paper would be to go deep into the actual implementation of building blocks of RAC and finding out how various domains of research can be accommodated into it, requirements and challenges to implement the same.

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My name is **Praveen Kumar** M R MPhil Student, Christ University Bangalore. Before joining M.Phil. I was working in IT industry for 12 years. My qualification is Bachelor in Engineering and master's in Engineering. My interest for research made me to join back to education in research.