University News, 52(47), November 24-30, 2014 pp.9-18

Automation and Networking of Academic Staff Colleges: A Proposal to University Grants Commission

Santosh C. Hulagabali
Research Scholar, Dept. of Library & Information Science, University of Mumbai;
Librarian, Nagindas Khandwala College, Malad (W), Mumbai-400 064
E-mail: santosh@nkc.ac.in

1. Introduction

The contribution of University Grants Commission's (UGC) Academic Staff Colleges (ASCs) to the Indian higher education sector is incredible. This is notable as 66 ASCs are actively imparting continuous training to the teachers serving in Indian colleges and universities. However, the ASCs are facing some key challenges. NAAC's (National Assessment and Accreditation Council) assessment of 66 ASCs reveals that only 13 ASCs were identified as 'performers'. The parameters to arrive to this result were varied. But the moot point is how best these colleges need to improvise as to impart more teacher-centric and output-oriented services.

The key issue is that these training centres (ASCs) are working tirelessly in training teachers and generating scholarly information, but in isolation. This means there is no centralized and networked platform available to exchange the ideas generated in various training programmes at 66 ASCs. Moreover, the back-end tasks performed by the administration offices of ASCs are not automated with one unique (office management) software. So automation and networking of all ASCs is need of the hour. It ought to be in line with the latest technological trends in academics by catering an open access to information resources on an ICT (Information andCommunication Technology) enabled and utilitarian platform. The very automation and networking of ASCs, if implemented, can revolutionize the Indian higher education system in general and teachers in particular as the best trained teacher's group.

We live in a globalised economy where exchange of goods and services are the basic features. As Haravu rightly says "globalization is in a sense synonymous with networking. Computers, telecommunications infrastructure and the Internet are not only essential but indispensable in the world we live in today". So the ASCs need to embrace the ICT to reach out to the teacher participants (TPs), who join various training programmes of ASCs, and also the public at large. This could be possible if the ASCs accept the change. It also depends on the will and wish of the concerned government authority or regulatory body to bring in technologically-driven change. So the government needs to invest in such areas of education sector that can transform the teaching, learning and research processes. Therefore, "..it is important not only to invest more in education but to do so more strategically. Central government should invest more

resources in teacher education and development, principal training, ICT in education and assessments" (Aga, Dhawan, & Chandra, 2014, p. 16).

The paper proposes some basic but broad features required to connect 66 ASCs with each other and the aspiring TPs by (a) automating the back office with an office management software and (b) networking the ASCs to have one unique online platform/portal to store, process and disseminate the requisite information openly.

2. Concepts

2.1. Automation: Automation is an activity or an initiative to induct a software application for the crucial functions of a department or a system. This also means building the technologically assisted interface to computerize certain tasks in view of bringing out clarity, transparency, efficiency and make the entire process economical.

2.2. Networking: "Network is an interlacement of threads, wires, or strings to form a fabric or web. In a network environment, though the members of a group are physically separated, they work as a unit" (Mouli, 2014). In the paper's context, networking means connecting all 66 ASCs with the help of networking topologies and allied technology to share the resources mutually and remotely on an interactive platform.

2.3. Consortium: Consortium is about resource sharing mutually among the group or institutes by a formal agreement. Consortium is like networking when "two or more organizations are engaged in the exchange of information through common communication channels, usually for the purpose of accomplishing shared objectives. When the organizations are libraries, the arrangement is a *library network*" (Reitz, 2004).

2.4. Teacher Participant (TP): A teacher (in service) who is pursuing any of the training programmes conducted by an ASC. In this paper, TPs are also referred to as teacher and educator.

2.5. Resource Person (RP): An expert academician or professional, specialized in a selected area of study and, invited to deliver lectures in the training programmes by an ASC. TPs are the core audience of the RPs.

3. Objectives, Scope and Limitations

The objective of the paper is to propose an automation and networkinginitiative for ASCs to UGC. However, it does not discuss about the exact technical infrastructure and specifications required and estimated cost to implement the same. The paper also explores possible avenues, risks and challenges to implement the same. The scope of the paper is restricted to 66 ASCs established by UGC. The paper proposes the broad functions and features, than the exact technical options, required in automating and networking the ASCs. The suggested broad technical features and issues are hypothetical

in nature and they may differ/depend with/on the policies of UGC (or any relevant regulatory body) and also the actual requirements of ASCs when initiated to automate and network them.

4. Academic Staff Colleges

The UGC has established 66 ASCs[#] in the following states.

Table 1: State-wise distribution of ASCs

State/UTs	No. of ASCs		State/UTs	No. of ASCs
Andhra Pradesh	6		Madhya Pradesh	4
Assam	1		Maharashtra	5
Bihar	2		Manipur	1
Chattisgarh	2		Meghalaya	1
Delhi	3		Mizoram	1
Goa	1		Orissa	4
Gujarat	3		Puducherry	1
Haryana	3		Punjab	3
Himachal Pradesh	1		Rajasthan	3
Jharkhand	1		Tamil Nadu	4
Jammu and Kashmir	2		Uttar Pradesh	5
Karnataka	3		Uttaranchal	1
Kerala	3		West Bengal	4
Total 66				

[#]*Source: University Grants Commission (2012)*

4.1. Objectives of ASCs: It is imperative to know why and how the ASCs were introduced by UGC. This helps correlate the purpose behind proposing an automation and networking initiative for ASCs. UGC started ASCs to enable newly appointed lecturers to:

a) understand the significance of education in general, and higher education in particular, in the global and Indian contexts;
b) understand the linkages between education, economic, socio-economic and cultural development;
c) acquire and improve art of teaching at the college/university level to achieve goals of higher education;
d) keep abreast of the latest developments in their specific subjects;
e) understand the organization and management of a college/university and to perceive the role of teachers in the total system;
f) utilize opportunities for development of personality, initiative and creativity and
g) promote computer literacy as well as use of ICT in teaching and learning process. (University Grants Commission, 2012, pp. 1-2).

4.2. Functions of ASCs: Following are the functions of ASCs as directed by UGC. The ASCs:

a) formulate a programme of orientation;
b) identify resource persons in various fields of specialization for running the orientation programmes and refresher courses, and familiarize such resource persons with the philosophy and guidelines for the courses;
c) set up a documentation-centre-cum-library for reference and source materials necessary for the courses;
d) produce specially designed material required for effective implementation of the courses;
e) organize, monitor and evaluate the courses for teachers;
f) create a culture of learning and self-improvement among teachers so that it becomes an integral part of the educational system at the tertiary level;
g) organize orientation programmes for senior administrators, heads of departments, principals, deans and other decision-makers to familiarize them with the philosophy of orientation intended to facilitate reform in higher education through appropriate modification of the management systems at various levels;
h) provide opportunities for teachers in service to exchange experience with theirpeers and to mutually learn from each other;
i) provide a forum for serving teachers to keep themselves abreast of the latest advances in various subjects and
j) provide opportunities to further widen their knowledge and to pursue research studies (University Grants Commission, 2012, p. 5).

5. Status of ASCs

ASCs need to act as democratic institutions by sharing information mutually among the ASCs. The sharing activities need to percolate down to the educators and public at large. Because, such a democratic approach "..strengthens education and education reinforces and integrates democratic values" (Ashokan, 2014) so "..meaningful institutional co-operation, standard policy statements and shared governance through democratic discourse can sustain the system" (Ashokan, 2014) of ASCs.

The following points throw light on the working condition of the ASCs.

a) The biggest challenge the ASCs are facing, is of their 'performance'. This means, not all ASCs are working in line with the above objectives (see 4.1) set by the UGC. It is evident from the academic audit of ASCs by NAAC that only 13 ASCs were found 'performers', 46 'under-performers' and 7 'non-performers' (Source: www.naac.gov.in/docs/ASC%20-%20Consolidated%20List.pdf). This raises a serious concern about the expected quality and contribution of ASCs to the Indian higher education system in general and teachers in particular.

b) The ASCs are not working in an automated and networked environment. They do not have uniform office management software that eases the administrative functions of ASCs. As INFLIBNET devised SOUL (Software for University Libraries) to automate

the library and information centres of Indian universities and colleges, similar initiative to automate the ASCs by NIC (National Informatics Centre) or INFLIBNET or any third party is *sine qua-non.*

c) The online presence of an academic institute is necessary as the online user base is growing rapidly. When it comes to ASCs' presence online, many of the ASCs have their official websites or web pages in the university websites (where they are located) and some selected ASCs have their independent official websites. It is disappointing fact that even the UGC's website does not have the hyper links directing the educators to ASCs' websites. This is one of the fundamental challenges the educators face most often when he/she tries to find out the URL (Uniform Resource Locator) of the required ASC/website (to find out the forthcoming training programmes or any other required information). Especially the teachers who are due for promotion suffer a lot as they badly need information on forthcoming training programmes. There is no centralized portal/online platform which directs the educators/netizens to access the required ASC within minimal time. The ASCs' presence on social networking sites is also not so impressive.

d) These training institutes are facing serious problems in regard to training the teachers qualitatively. Thus "it is unfortunate that teaching today does not attract the best talent... Our Teacher Education Institutes (TEIs) capacity is extremely fragmented with over 11 lakh seats in 14,000 TEIs. Most of this capacity is of poor quality that has been created through non-transparent, poorly formulated TEI recognition procedures". (Aga, Dhawan, & Chandra, 2014, p. 16). This applies to ASCs too as only 13 ASCs were found 'performing' by the NAAC.

e) The criticism related to poor financial backing for the Indian higher education system is a reality. The literature review on this issue revealed the fact that many authors have echoed the poor financial backing to the higher education system. This applies to ASCs too. Such is the sorry state of the higher education system which is not given due encouragement financially. Thus there is a lacking of innovative reforms in the education system.

f) UGC and other academic funding agencies are supporting teaching, research and publication activities. But such publicly funded 'research outputs' are not in public domain, especially on web-based platform (WBP). INFLIBNET is putting efforts to make such publicly-funded outputs available through its projects viz. *Shodhganaga, Shodhgangotri* and *Research Projects.* But still the archival of e-theses and dissertations (ETDs) needs to catch up even faster. It is also contradictory that UGC funds teachers to undertake the minor/major research projects (MRPs). But the completed MRPs are accessible only at bibliographic and abstract level in *Research Project* (www.inflibnet.ac.in/researchproject/) database. Instead these are needed to be in public domain at full-text level. Therefore Sunil Abraham, Executive Director of Centre for Internet and Society (CIS) says "..taxpayers should not pay twice to access research funded by taxpayers' money. If these work ends up in proprietary journals, we have to

pay again to read them" (Soman, 2014, p. 6). In such circumstances, creating an open access resource sharing platform of ASCs is badly required.

g) Most of the ASCs are not subscribing to online databases of journals and e-books. And some of the ASCs lack qualitative and quantitative collection in their libraries. So the ASCs need to subscribe to online databases on consortia mode and enable the TPs access the scholarly resources during their course period.

Therefore, the possible solution before the ASCs or UGC is that it/they should take an objective and goal-oriented initiative including automation and networking of ASCs.

6. Automation and Networking

It is important to note that, "Friedman, in his book *The World is Flat*, highlights the importance of networking as a result of advances in technology, and comments on the impact of networking via technology on our ways of working in the world and the global economy" (Stott, Jopling, & Kilcher, 2006, p. 2).To make this happen, the implementation of automation and networking is necessary which requires different set of hardware and software platforms. "To enable interconnectivity to a diversity of systems and mutual sharing of resources and exchange of data between them requires that all of them follow internationally agreed upon standards. Networks operate at different levels in respect of: the variety of resources they handle; the computer hardware they use; operating system platforms; the language used to describe subject content; the support to protocols and standards they provide, and the back-end software in use" (Haravu, n.d.).

7. Why Automation and Networking of ASCs?

In the era of ICT and open access movement, devising an IT enabled system and sharing scholarly information openly are need of the hour. This makes the society a real 'knowledge society'. The technology supported system can help empower the academicians by sharing knowledge mutually. In this view, the networking and automation of ASCs are necessary for the following purposes:

	Why Automation?	*Why Networking?*
1	Automation of ASCs' administrative functions saves time, cost, energy, manpower and upholds transparency.The functions of ASCs include introducing important modules viz. preparing training schedules, online application module, selection module, online payment cum registration, budget, financial transactions, directory of TPs/RPs, digital archive, photos gallery, annual reports etc. (see also 7.1a).	Networking of ASCs help share information mutually among the ASCs and the teachers. In this view, the training schools help the teachers upgrade their knowledge and thus transform their teaching and learning experiences. Considering the ASCs phenomenal role, the ASCs need to go a step further to share knowledge generated in the various programmes. Therefore,networking of the ASCs is crucial.

2	Automation helps cater the required service to the stakeholders with much ease, if the above modules are introduced.	The networking brings all ASCs together in generating, storing and disseminating the information crucial for the educators.
3	Automation of all ASCs with one common house-keeping software makes ASCs help maintain 'uniformity' in the administrative functions the carry out.	The consortium platform helps bridge the digital divide among ASCs and educators. Because all ASCs may not reach the thousands of teachers serving in colleges and universities. So networking bridges this gap.
4	As an initial base, automation platform helps build the inter-related applications which are also necessary for networking ASCs.	In an open access environment, sharing of information without any hurdles helps create a real knowledge society. Networking of ASCs can help achieve this.
5	To keep pace with the automated delivery of service, automation of ASCs is required. Therefore, the automation is the best solution to address the global trends and challenges posed by ICT in the education sector.	The ICT tools and techniques in education fields are emerging like never before. We are witnessing open source software (OSS), open educational resources (OERs), open learning, digital library etc. So these should be implemented to benefit all ASCs. So considering networking is a must to begin with initially.
6	At large, automation is necessary to save national invaluable time and energy and utilize the expertise of our knowledge to make the ASCs step along with the latest trends in a global context.	The teacher spends a lot of time in accessing the ASCs as there is no such platform where in he/she can access multiple ASCs simultaneously. The networking of ASCs makes an impressive impact on the students indirectly. If the access is under public domain, then it impacts both teachers and students as well as public at large.

7.1. Areas of Automation and Networking

a. Automation of Administrative Functions: The necessary and broad automation functions/modules of ASCs are discussed as below.

Modules	*Tasks*	*Description/Functions*
Announcement	Announcement of training schedule, names of selected participants etc.	The module generates the schedule of the OP/RC/STCs* with the details of dates, fees etc.
Apply Online	Online Application module to apply for OP/RC/STCs progammes	Interested teachers apply online with necessary documents.

Selection	Scrutiny, selection and announcement of selected TPs	The staff enters the details and generates the list of selected candidates/TPs based on the preference to be given to those teachers who need to be given admission on priority basis.
Admission	Online admission with payment gateway	Based on the selection status, the selected candidates take admission online by adding all required details, documentation with online payment.
Assignment Repository	Online submission of assignments by TPs	TPs upload the requested assignments or projects online and those can be shared on the portal openly.
Performance	TP's performance calculation	The points or grades assigned to the TP by the respective observer will be entered in this module.
Evaluation	Evaluation of TP's performance	At the end of the Course, the automatic result of the TP's,based on the performance, can be generated.
Feedback Form	TPs' Feedback Forms on RPs. The online feedback form should be same for all ASCs	TPs feedback about the RPs is one of the important requirements at ASCs. TPs feedback forms can be entered by TPs. This helps generate required reports (Example: which RP has made real impact on the TPs and the Course).
E-certificate	Calculating and awarding grades and e-certificates	Grades can be generated automatically and the e-certificates can be prepared and issued out online.
Analysis	Online analysis of TPs Feedback Forms	TPs feedback about the entire course is necessary so as to understand the service, arrangements and efforts put in by the respective ASC to train the TPs. So automated analysis needs to be done by the respective module.
Reports	Generating required reports	Generates selected reports of some administrative tasks of ASCs. (Example: budget, selection of TPs, selected TPs,

		batch-wise and year-wise TPs list, RPs, TPs subject-wise etc.
Login	Authenticating a particular ASC	Each ASC uses their login identity (ID) and password to access the site to make necessary changes.

**OP: Orientation Programme; RC: Refresher Course; STCs: Short-Term Courses*

b. Networking of Academic Areas: The necessary and broad networking functions/modulesof ASCs are discussed as below.

Modules	*Tasks*	*Description/Functions*
Themes	Themes and sub-themes of the training programmes	Themes and sub-themes of training programmes help aspiring TPs to get all themes on one page and select and proceed for one particular theme/programme/ASC.
RP Directory	Directory of Resource Persons	The brief professional profile of RPs delivering lectures in 66 ASCs should be available.
TP Directory	Directory of Teacher Participants	The names of TPs who have successfully completed the programmes of ASCs should be made available (with their photos, year of completion of the programme and their brief professional profile).
Archive	Presentations of RPs	The power-point presentations and audio-video presentations prepared by RPs and the selected TPs can be uploaded and shared on the portal openly.
Assignments	Assignments completed/given to TPs by RPs	The TPs can upload, read, download and share their assignments during their course. Once they complete their programmes, the selected assignments can be shared on the platform.
Alumni	An online directory of TPs those successfully completed training programmes	An Alumni module is an opportunity for the TPs who have completed the programmes to network with their batchmates, RPs and other TPs of different ASCs/courses.
Circulars	Circulars of ASCs	All circulars related to ASCs released time to time by UGC, NAAC and the concerned universities of ASCs are uploaded on a search-interfaced page.
Rules	Rules and regulations of ASCs meant for TPs	Any rules and regulations related to individual ASCs are given under each

		ASC.
E-certificate	E-certificate of ASC courses	Unlike UGC-NET's e-certificate, the TPs, completing course, can view and download the certificate anytime and anywhere.
Consortia	Subscription to databases	Centralized subscription of databases viz. EBSCO, EMERALD, SPSS, ProQuest, Manupatra, etc. for TPs. Access to the databases can be given to TPs/RPs during the training programmes.
Newsletter	Online newsletter of ASCs	Online newsletter of (cluster of) ASCs comprising the successful stories, best practices of ASCs and events.
Events	Event details about regular courses of ASCs and others	Alerting teachers about forthcoming events like conferences, seminars, workshops, if organized by ASCs.
Useful Links	Links to important sites	Links to important educational websites (like UGC, NAAC, INFLIBNET, N-LIST, Vidwan) and OERs etc.
Connect	Connecting TPs with social networking sites including blog.	Networking enables ASCs to have a strong presence on social networking sites. Official blog of ASCs also help teachers informed about the trends in training, research and innovations.
Contact	Sufficient contact details of each ASC	Providing proper contact details with unique e-mail IDs (Example: mumbai@ascportal.ac.in; dharwad@ascportal.ac.in), postal addresses and telephone numbers provided.
Help Desk	Facilitating service-oriented help desk	A national help desk specifically for answering the queries of teachers in service. It should enable teachers to call up or, send message or email.
Online Chat	Chat feature for keeping in touch with concerned ASCs	An online chat facility to connect with the office bearer/s or Director/s of the ASC/s or any designated staff 24x7.
ASC App	Mobile application	ASC portal can be designed/customised on smart phone Application featuring important modules/functions of ASC.

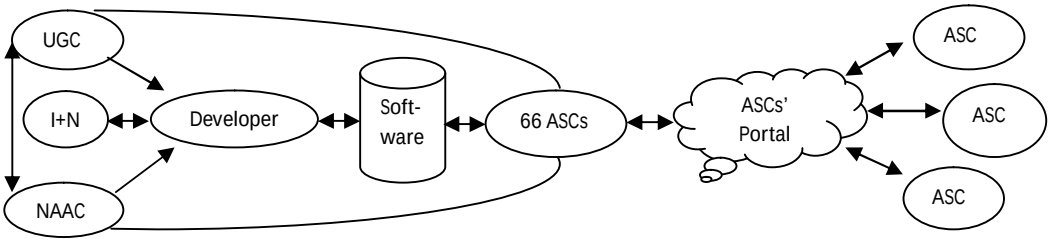
8. Automation and Networking Models

The UGC is funding the ASCs but at the same time the former is expected to pave the way for bridging the resource sharing between ASCs, educators and public/society. The

visionary-driven leadership/approach to automate and network the ASCs can herald a new way of functioning of ASCs. As NAAC is associated with ASCs in the assessment and accreditation activities, automation and networking of ASCs can be bestowed upon INFLIBNET or NIC or a private developer/agency under the joint-supervision of UGC and NAAC. A separate unit comprising technical and domain experts from academia and industry can be roped in to monitor the functioning of the said task. "In the umbrella of INFLIBNET many services and activities are run for the development of Indian higher education to the each and every people of India" (Waghmode, 2014, p. 10). So why not link ASCs by INFLIBNET? Even AIU (Association of Indian Universities) can also be roped in as it "acts as a service agency to universities in whatever manner it may be required or prescribed" (AIU, 2014). The AIU should also supervise or support the initiative, shouldn't it? If not INFLIBNET or NIC, any third party (public or private) should be assigned to devise a common house-keeping software and then link the ASCs.

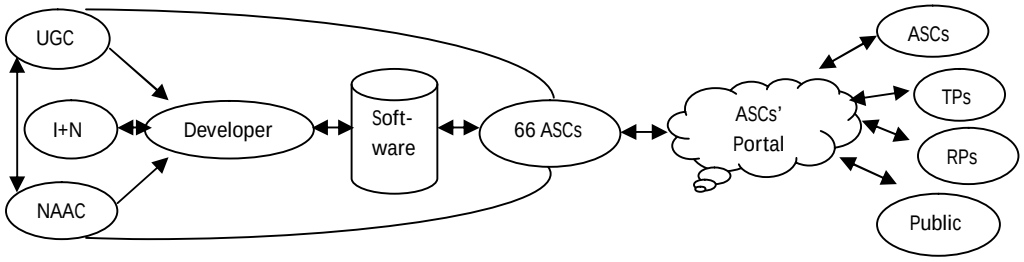
Model 1: The following 'hypothetical' figure-1 shows that: (a) UGC funds a developer/agency (it could be INFLIBNET or NIC or any other third party) undertakes the automation and networking initiative; (b) INFLIBNET and NIC acts as technical observers; (c) UGC and NAAC (even AIU) are roped in as observers as to support quality and sustainability; (d) developer devises a software for automating house-keeping operations of ASCs; (e) the software is installed in 66 ASCs; (f) developer designs and hosts portal; and (g) the portal is accessed by all ASCs with an individual login ID and password. Such an automated and networked environment helps each ASC computerize its routine administrative functions and share resources among other ASCs on the portal.

Figure 1:Automated and networked environment of ASCs (I+N=INFLIBNET+NIC)



Model 2: The following 'hypothetical' figure-2 follows the same functions as projected in Model 1, except the portal's reach-that is kept open for (a) participating ASCs (access by login IDs and passwords); (b) RPs are connected with the portal even after they deliver their lecture for updating/uploading their presentations; (c) TPs use the above stated Modules (see 7.1b) and keep associated with the ASCs online; (d) public belonging to any field or demography (students, teachers, professionals, policy makers etc.) use the selected Modules (see 7.1b) or resources openly (Example: as ETDs from *Shodhganaga* are being accessed by anybody).

Figure 2: ASCs' networked environment for ASCs, TPs, RPs and public



9. Key Issues in Building Automation and Networking Platform

Apart from the technical issues discussed above, the following key issues need to be taken into utmost consideration while building the automation and networking platform for ASCs.

9.1. Leadership and Management: Leadership is a big challenge for Indian higher education system. It is the "largest higher education system in the world by the number of institutions with around 634 universities and about 33023 colleges (now 704 universities and 35539 colleges)" (Swamy, 2014, p. 3). But the system is lagging behind because of poor leadership to put the innovative and reformative projects on fast track. As discussed above about INFLIBNET, which "was created for promoting R&D (research and development) activities in area of networking and quality management" (Waghmode, 2014, p. 10), UGC may designate it or any other regulatory body or private firm to devise an automation and networking platform and also maintain the same post-launching. So the able leadership and management of the initiative are crucial to yield targeted results.

9.2. Role of Regulatory Body: The central/state government needs to be active in regulating, motivating and formulating policies related to open access and its use. But there are some critical opinions that "the regulatory bodies such as the UGC and the NKC (National Knowledge Commission) do not see eye to eye on the role and nature of regulation. State and central governments also have conflicting views" (Samuel, 2009). In such cases the ambitious projects take a back seat. On the other hand, many research projects funded by central/state government are not (accessible) in public domain. So the government needs to carry out massive reforms in this case and thus motivate the culture of sharing. The automating and networking of ASCs would be possible when the initiative is motivated for collaborative sharing and inclusive growth.

9.3. Planning: The initiative of connecting the ASCs largely depends on the well-defined and goal-oriented plan. The planning must be target-oriented and achievable. The automation and networking should be planned methodologically in consultation with the officers of UGC, officers and academic auditors of NAAC, directors of ASCs, technical experts of INFLIBNET, NIC, and education or industry consultants. The UGC needs to rope in every possible experts/institutes to chart a path breaking blue-print for ASCs. The project plan may be executed phase-wise or zone-wise or based on the performance of the

ASCs as assessed by NAAC or it could be for all ASCs. Therefore, an inclusive and utilitarian plan needs to be in place.

9.4. Academic Audit for Preparedness: The UGC needs to get the status report of individual academic audits ASCs for introducing technological infrastructure. This is necessary as all ASCs vary in the facilities (infrastructure, manpower, skills etc.) available at their disposal. Accordingly a detailed plan can be chalked out. Moreover, the automation needs such audit process as to understand the system and develop a tailor-made software. The audit also helps in identifying the proper areas of networking. So automating the day-to-day work needs to be audited prior taking the initiative.

9.5. Standardization: The automation and networking needs standardization in bringing uniformity in administrative functions. So introducing standardized modules based on the real requirements of the ASCs is necessary. The initiative requires adopting certain necessary international standards too viz. "metadata standards which includes standards for data elements as well as identification, description and representation standards; Information exchange standards; Communication standards; Content representation standards; Interoperability standards" (Haravu, n.d.). For instance: applying the said standardization for a common online application form for the training programmes, feedback form, directory of TPs/RPs etc. for all ASCs. Standardization makes the automation and networking more effective.

9.6. Financial Preparedness: Many articles and reports were browsed to understand the financial status of Indian education system. But majority of the papers have portrayed a dismal financial funding-status of Indian education system. So it is true that "in many developing countries new technologies are often considered the key for increasing access to higher education. Yet there are enormous costs and difficulties embedded in the reliance on ICTs in terms of hardware, software, technical support, training and continual upgrades"(Altbach, Reisberg, & Rumbley, 2009, p. xviii). Therefore, it is UGC's top priority to launch this initiative and thus earmark budget to spend on planning, implementation and maintenance of automation and networking of ASCs.

9.7. Developing Mutual Learning Relationships: As UNESCO categorizes 'learning' in three forms, viz. *'learning to know'*, *'learning to do'* and *'learning to be'*. So such learning can be achieved only in a mutual-learning environment. The mutual-learning relationship is possible only when people come closer to each other to discuss, debate and share the issues. All 66 ASCs conduct training programmes on significant themes and sub-themes but not all the ASCs or TPs/RPs know about what is happening in other ASCs. Moreover, a full-time teacher needs to pursue five/six training programmes in his entire career. This means, the teacher is restricted to the knowledge gained from those five/six ASCs/programmes (where he/she participated) only. Therefore, automating and networking caters an avenue to facilitate mutual-learning between ASCs and TPs.

9.8. Design and Launch of Portal: The portal needs to be built keeping the latest technological media viz. social media, internet and telecommunications in mind. The platform selected for the portal needs to connect and engage the TPs, RPs and public on cloud. Sooner the launch of the portal, greater the benefits for stakeholders of ASCs.

9.9. Continuous Training and Support: The implementation of automation and networking could be a challenge considering the 'individual preparedness' of each ASC. So there is a continuous need of training and support. The training programme for the ASC Directors and staff can be organized by INFLIBNET/NIC or some selected ASCs lead the in-house training programmes initially. The trained ASC staff can deliver the best service to all stakeholders associated with the ASCs.

10. Conclusion

Dr. A P J Abdul Kalam says "whether a nation qualifies as knowledge society is judged by how effectively it deals with *knowledge creation* and *knowledge deployment*" (Rahman & Banu, 2014, p. 12). The UGC (and ASCs) needs to make this meaningful statement true by making the ASCs accessible openly to public at large.The accessibility to the intellectual output funded and produced, in support of public funds, needs to be in public domain.

The government should take a bold step in making the information available for public for further R&D activities. However, the government, UGC, NAAC, AIU and ASCs are working at arms length in keeping the educators and public connected by networking the ASCs. At the same time, automation of the ASCs' administrative functions should not be ignored as they are responsible to bring in transparency, uniformity and educational reforms. By taking the required initiative, the ASCs should be made accessible to the NAAC, UGC and other regulatory bodies too as to sustain the quality. These bodies can observe the developments and the actual functioning of the ASCs and necessary value, whenever required. Therefore, the ASCs are required to be in line with the technological trends emerging in the higher education sector. To achieve this, the automation and networking are the best solution to address the global trends and challenges posed by ICT in the education sector. In a globalized world "our country needs bold reforms and focused implementation with clear targets for learning outcomes to achieve this goal" (Aga, Dhawan, & Chandra, 2014, p. 16). So, India can be a model state for other developing countries to automate and network the educational training centres and thus propagate the value of sharing and open learning. May UGC make it possible.

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References

Aga, A., Dhawan, A., & Chandra, A. (2014, June 10). Letter to Smriti Irani. *The Times of India* , p. 16.

AIU. (2014, July 22). *Objectives*. Retrieved from aiuweb.org: http://www.aiuweb.org/Objectives/objectives.asp

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). *Trends in Global Higher Education: Tracking An Academic Revolution (A Report Prepared for the UNESCO 2009 World Conference on Higher Education)*. Paris: UNESCO.

Ashokan, A. (2014). Education, Values and Governance: Some Reflections. *University News, 52* (6).

Haravu, L. J. (n.d.). *Standards in Library Automation and Networking.* Retrieved April 18, 2014, from drtc.isibang.ac.in: https://drtc.isibang.ac.in/bitstream/handle/1849/291/Standards+in+Library+Automation+and+Networking.pdf?sequence=1

Mouli, R. C. (2014). Networking of Open Distance Learning Instituions. *University News, 52* (9).

Rahman, S. M., & Banu, H. A. (2014). Higher Education in India: Moving Towards Service Revolution and Knowledge Revolution. *University News, 52* (11).

Reitz, J. M. (2004). *Dictionary for Library and Information Science.* Westport: Libraries Unlimited.

Samuel, P. (2009). Internationalization of Higher Education: Strategic Implications. *Economics and Political Weekly, XLIV* (9).

Soman, S. (2014, July 22). India to Create Free Access to Scientific Work Online. *The Times of India* , p. 6.

Stott, A., Jopling, M., & Kilcher, A. (2006). *How do School-to-School Networks Work?* Retrieved June 27, 2014, from http://networkedlearning.ncsl.org.uk/collections/network-research-series

Swamy, N. R. (2014). Role of Regulatory Bodies in Indian Higher Education Education. *University News, 52* (11), 3.

University Grants Commission. (2012). *Guidelines for Academic Staff Colleges (2012-2017).* Retrieved April 18, 2014, from ugc.ac.in: http://www.ugc.ac.in/oldpdf/xiplanpdf/academicstaff.pdf

Waghmode, S. S. (2014). Role of INFLIBNET in Growth and Development of Higher Education in India. *University News, 52* (6).