

**Review Article**

**INTELLECTUAL CAPITAL REPORT: A CASE OF PONDICHERRY UNIVERSITY**

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**Abstract**

Higher Education Institutions (HEIs) play a very important role in the knowledge-based economy where Intellectual Capital (IC) as considered as important factors for creating value of economic wealth. In order to develop, maintain and manage the universities intangible resources and activities the disclosure of information on IC become necessary by the universities. The aim of this paper is measuring and managing intellectual capital report in Pondicherry University. This paper uses the framework of OEU – Strategic Matrix (The Observatory of the European University) to give some intuition for the present position of non-physical assets in Higher Education and research system and point out specific a idea and methodological considerations. This framework consists of five thematic aspects that are, funding, human resources, academic outcomes, third-mission, governance and five transversal aspects that are autonomy, strategic capabilities, attractiveness, differentiation profile, territorial embedding in the OEU strategic matrix. The data collected from the Pondicherry university web site for the year 2013-14 was used for the study. The finding helps to understand the intellectual contribution of Pondicherry University system, towards excellence.

**Keywords:** Strategic Management; Intellectual Capital; Higher Education Institutions; Knowledge Management; Intangible Assets.

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**INTRODUCTION**

The HEIs plays the new paradigm of the Knowledge-based Economy, where wealth and economic growth is driven primarily by intangible assets (Lev, 2000; p.1). The knowledge-based economies are formed by activities of ideas, talent, ability and modernization, which flow uniformly around the world. The twentieth century has acknowledged to a higher/lower degree, the presences of intangible components are explaining part of the economic development (European Commission, 2000; Organization for Economic Cooperation and Development, 1996; Dobat, 1996; Deninson, 1962; and Solow, 1957).

Universities produce its knowledge through teachers and researchers, from the teaching point of view (students trained and productive relationships with their stakeholders) and technical and scientific researcher's point of view (the result of an investigation, publication, etc.). The presentation of information on (IC) is an effective tool for communicating to stakeholders the Institution's capacities, resources and commitments in relative to the fundamental determinant of the universities value (Dhillon, M. 2010). Subsequently, the ICU statistics reports on the works obtained by the Institution in the system to develop maintain, manage and report on intangibles seems too necessary for decision making of universities and research institutes more comparable, transparent and competitive.

This paper has designed an analytical framework developed by PRIME (Policies for Research and Innovation in the Move toward the European Research Area) Network of Excellence–The Observatory of European Universities - OEU framework for the universities management and research activities to be taken.

**SOME IC MODELS IN UNIVERSITIES AND RESEARCH ORGANIZATIONS**

Intellectual capital powerful tool for disclosure of universities, there are five different organization are tested the IC report in universities, which are found that the most representative mechanism of the present situation in IC that can be useful to universities.

**IC report of the Austrian Research Centre (ARC)**

In the year of 1999, ARC was the first European research organization to publish an ICR. The important function of ARC

is to build the relationship between universities and companies, it means that, starting research from universities and applied that research to the companies. The ICR is an instrument to measure the intangibles in the organization which are not shown on its balance sheet of the annual report (Austrian Research Centers, 1999). This method covers three main components of IC – i.e. human capital, structural capital and relational capital – and is based on an indicator-based approach.

**Institute of Innovation and Knowledge Management (INGENIO)**

INGENIO was started in the year of 1999, as a combined initiative between the Spanish Research Council (CSIC) and the Polytechnic University of Valencia, joint MoU with the Technological University of Venezuela.

The Institute took three activities encompass on the action, reflection and open to learning. The main indicators are as follows. (ingenio.upv.es):

- Research on science and innovation
- Training and teaching activities to university stakeholders.
- Dissemination activities aimed at likeable national and international stakeholders

**IC in HEROs**

Intellectual Capital in 'Higher Education Institutions and Research Organizations' (HEROs) is a step taken by the members of the 'European Association of Research Manager and Administrators' (EARMA) in collaboration with the 'European Center for the Strategic Management of Universities' (ESMU). One of its main premises is that the organization's intangible assets are specific to each institution and their value and relevance depend on their potential contribution to the institution's key goals (Sanchez, P. 2006).

**PCI Project**

The objective of this project is the knowledge that can be improving the organization process and their relationship with other organization and this information is disclosed in the annual report in order to improve their transparency (Comunidad de Madrid, 2002).

**Observatory of European Universities (OEU)**

The Observatory of the European University (OEU), created in June 2004, is a project developed within the European “Network of Excellence” PRIME (Policies for Research and Innovation in the Move towards European Research Area) involving the co-operation of 15 European universities. The aims of the OEU-Strategic Matrix is to understand better the importance of managing intangibles in public universities in order to improve their level of quality and competitiveness. Its objective is to provide universities with adequate tools and instruments for the governance of their research activities (Córcoles, R. Y. 2013; Dhillon, M. 2010).

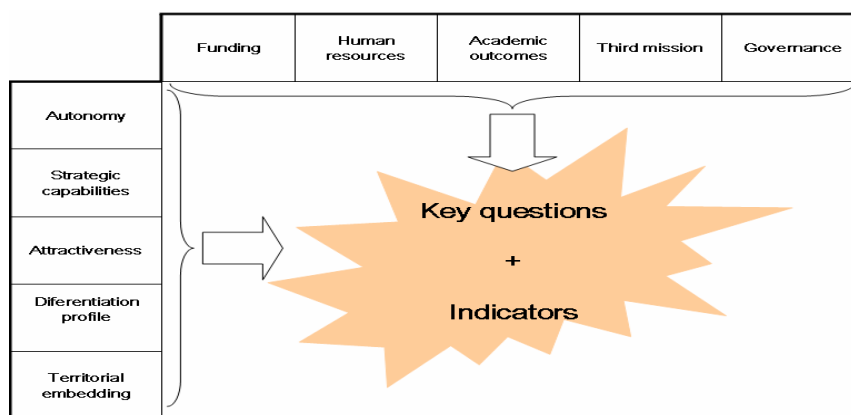
This framework was developed by fifteen universities and eight research institutes from Europe. The project has created two-dimensional first, the dimension deals with thematic aspects and second deals with transversal issues.

The first dimension of the matrix deals with five thematic aspects of university research management. The “Thematic Aspects” selected were; **Funding** (revenues and expenses), **Human Resources** (administrative staff, teachers /researches and Ph.Ds), **Academic Outcomes** (articles and publications,

and knowledge embodied in Ph. Ds), **Third Mission** (relations linked between university and its non-academic and **Governance** (the university converts its inputs funding and human resources into research outputs Academic Outcomes and Third Mission).

The second dimension of the matrix deals with qualitative profiles; it should be approached mainly as a characterization issue. The “Transversal Issues” considered were; **Autonomy** (degree of freedom of the university to allocate resources), **Strategic Capabilities** (ability to explain its own strategic choices), **Attractiveness** (money, people, research equipment, collaboration with other organization, etc.) **Differentiation Profile** (individuality with competitors) and **Territorial Embedding**: (involvements, contacts, collaborations, etc.).

The result of OEU-Strategic Matrix is required to help the university research management. This two-dimension is an instrument for the universities is to facilitate a common framework to compare their strengths and weaknesses during the time, and to identify the best performing universities.



**Figure 1: Framework of the Observatory of European Universities: Strategic Matrix**

**Sources:** Observatory of European Universities (Madrid, 2005)

**THE ROLE OF UNIVERSITIES IN THE KNOWLEDGE-BASED ECONOMY**

HEIs play a vital role in the social, economic and cultural development of the Country. The role HE is moulding character and values to the citizen, the overall development of the country depends on educational growth.

The HE is the vital role of transformation towards sustainable development and growing people’s capabilities to transform their dreams into society. It provides the skills for learning to know, learning to live, learning to do and learning to be. In the 21st century, India’s ability to produce and disseminate education will increasingly determine its economic competitiveness (The Role of Higher Education in Creating a World Class Knowledge Economy, Abdul Kalam).

Higher Education has fundamentally three challenges:

- Expansion of our requirements
- Improving quality and improving it substantially
- Increasing access with equity which is inclusive

All these key priorities and need bold initiatives, vision, some amount of risk and commitment to form the future economy.

**THE ICU REPORT**

**Structure of ICU Report**

This chapter focuses on the performance indicators of IC Universities. Moreover MERITUM and Danish IC Guideline’s and Australian and Japanese Guidelines are strongly recommended IC is crucial for all organization. When

analyzing the OEU-Strategic Matrix framework, the researcher face some difficulties on different phases, mainly with data collection stage, segregate financial indicator and non-financial indicator, collecting data from different departments, level of comparison. IC model is not a usual model moreover, collecting the information from the different indicator of the organization. Hence, the ICU report is a new model to disclose homogenized, detailed and presenting IC information in a single document.

**Research Objectives**

This study the ICU Report disclose the information on the effort taken by the Institution in order to develop, maintain, manage and report on intangibles seem to be need for the future decision making of universities and research institutes more comparable, transparent and cometicive.

This paper has designed an analytical framework based on OEU guidelines for the governance of research activities. For each of these table key questions proposed to give relevant indicators and possible schemes for collecting the data required for these indicators.

In this regard a ICU model is proposed to provide group of information and disclosing IC in a single document. The descriptive elements become crucial to contextualise and better understand the information provided by the indicators the section should answer some general questions such as the following

- What are the core services provided by the Pondicherry University?
- What are the main objectives of the Pondicherry University?

- What makes a difference with respect to other institutions?
- What resources (human, structural and relational) are necessary to be able to reach the objectives and to provide the target services while ensuring quality?
- What is the combination of financial and non-financial resources that creates value to Pondicherry University?

Based on the research question, we framed two objectives

1. To measure financial and non-financial assets with the Pondicherry university annual statistics (2013-2014).
2. To manage .which of the three components of intellectual capital is the (human, structural, relational capital) fundamental determinant of the institution's value.

### Research Methodology

The data were collected from the Pondicherry University vital statistics for the year 2013-14 (as on September, 2013) from the respective websites. The OEU framework can adopt only for three years data 2011-12, 2012-13 and 2013-14 (as on Sept., 2013) from vital statistics.

IC comprises the three parts (human, structural and relational capital), with the key questions to be answered in each part. The IC indicator are categorised classified into two Financial Indicator (FI) and Non-Financial Indicator (NFI). The indicators which are derived from the OEU strategic Matrix, all the indicators shown in this selection were primarily developed as a management tool and should be particularly useful for university governance.

Among 141 indicators of the OEU Strategic Matrix, this study identified 51 indicators because of availability of data in the Pondicherry University and it can be divided into three components of IC under the following headings.

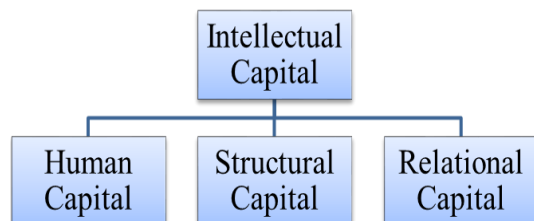


Fig. 2: Intellectual Capital (adapted from PRIME-OEU GUIDE-THE ICU Report, 2006)

### Human Capital (HC)

HC is defined as the knowledge that the human resources (teachers, researchers, Ph.D students, administration and service staff) would take with them if they left the institution (European Commission, 2006). HC refers to knowledge and skills of human resources. The universities are meant for the transfer of knowledge and enhancement of skills. This investment in knowledge and skills by the university is qualitative in nature (Dhillon, M. 2010).

### Structural Capital (SC)

SC is the explicit knowledge relating to the internal processes of dissemination, communication and management of the scientific and technical knowledge at the university. It can be divided into two parts: first, Organization Capital (OC): the operational environment derived from the interaction between research, internal procedure, management and organization processes, organizational routines, quality and scope of the information system, etc. secondly, Technological Capital: the technological resources available at the university, like bibliographical and documentary resources, archives, technical development, patents licenses, software, database (Ramirez, Y. and Gordillo, S. 2014.)

### Relational Capital (RC)

The extensive collection of economic, political and institutional relations developed and upheld between the university and its non-academic partners: enterprises, the non-profit organization, local government and society in general. It also includes the image, appeal, and reliability, etc. of the university.

### MEASUREMENT OF INTELLECTUAL CAPITAL IN PONDICHERY UNIVERSITY

The Pondicherry University is one of Central University in India located at Puducherry, Kalapet. This central university established under the Pondicherry University Act, October 1985. During the year under report, there were around 50,285 students on the rolls of the University through 88 Affiliated Colleges there by, contributing to the richness of the University's learning experience. The Affiliated Institutions/Colleges are located in Puducherry (59), Karaikal (14), Yanam (3) and Andaman & Nicobar Islands (6).

The affiliated colleges offering the Arts & Science Colleges, Medical/Dental/Research Institution, Para Medical, Engineering, Education, Law and Veterinary are affiliated to Pondicherry university spread over the Puducherry (U.T), Andaman and Nicobar and Lakshwadeep. It has three campuses, the main campus located in Puducherry which has fifteen schools, thirty seven departments, ten centres and two chairs, remaining two campuses which are located in Karaikal and Port Blair. This is first university in the India started a community college for local community students to enhance their employability.

The University's motto is 'Vers la lumière' it means that 'towards the light' and mission is EEE-Expansion, Excellence and Equity. The objectives of the university are to provide advance knowledge of teaching and research facilities, to make provisions for studies in French and integrated courses in Humanities and the Sciences, and to promote inter-disciplinary studies and research.

The Central Instrumentation Facility was started in Pondicherry University for promoting research and development with the following objectives.

- To strengthen technological infrastructure in academic departments and schools.
- To provide guidance in an acquisition of data and train personnel in operation and maintenance of Sophisticated Instruments.
- To organize various conference, workshop, seminars for students, teachers and technical staff.

### FINDINGS AND DISCUSSIONS

When analyzing the OEU-Strategic Matrix framework, the researcher face some difficulties on different phases, mainly with data collection stage, segregate financial indicator and non-financial indicator, collecting data from different departments, level of comparison. This limitation is reflected in this study for disclosure because of the goal of this work: creating a list of indicators that identify comparability within university

From the Table-1 Reporting of Human Capital indicators for the year 2008 to 2014 shows that all the 21 indicators are non-financial indicators. During the year 2012-13 M.Phil programme was removed all the departments of the Pondicherry University. In the year 2011-12 more number of Ph.D. dissertation submitted (18.34%) and the year 2012-13 more number the Ph.D scholars are awarded at 52.17%.

During the year 2010-11 total faculty growth (38.75%) has increased more and total non-teaching staff (5.93%) has increased. In the year 2009-10 more number of applications are received (208.11%) from the students and 2013-14 year applications received from students is decreased (-1.76%) because the reason is that Pondicherry University initiated

online registration, online entrance examination, online admission in DDE and online payment of fees.

The application came from various parts of the national and international candidates but the lack of awareness of rural community peoples, when we consider SC students strength has decreased year by year because of lack of awareness and family background of the students. In the year 2011-12, number students appeared in the university is more (70.74%)

and passed out students in the same year is (57.12%) and the year 2013-14 students appeared is decreased to (-5.48%) and passed out students in the same year is (-0.49%).

In the year 2011-12, affiliated colleges students strength has increased (15.80%) and the community college strength is increased is (103.71%) in the year 2009-10 and the distance education students strength (91.94%) is increased in the year 2013-14.

**Table 1: Reporting of Human Capital indicators for the year 2008 to 2014**

HUMAN CAPITAL		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2009-10 %	2010-11 %	2011-12 %	2012-13 %	2013-14 %
	Submitted M. Phil Dissertation	263	271	253	265	0	0	3.04	-6.64	4.74	0	0
	Awarded M. Phil	165	177	198	163	0	0	7.27	11.86	-17.67	0	0
	Submitted Ph.d Dissertation	98	106	109	129	148	111	8.16	2.83	18.35	14.73	-25.00
	Awarded Ph.d	58	69	76	92	140	71	18.97	10.14	21.05	52.17	-49.29
NF	Total No. of Faculty growth	193	258	358	377	388	376	33.68	38.76	5.31	2.92	-3.09
	Professors	68	76	86	83	83	75	11.76	13.16	-3.49	0.00	-9.64
	Readers/Associate Professors	51	63	97	96	100	100	23.53	53.97	-1.03	4.17	0.00
	Lectures'/Assistant Professors	74	119	175	198	205	201	60.81	47.06	13.14	3.54	-1.95
NF	Total No. of Non Teaching staff	694	576	589	621	640	678	-17	2.25	5.43	3.05	5.93
	4a.Statutory Officer/Group A&B Officers/Group C staff and Group D staff	560	471	589	508	497	485	-15.89	25.05	-13.75	-2.17	-2.41
	4b.Consolidated/Contract/Daily wages/ Others (retired and re-engaged)	134	105	141	113	143	193	-21.64	34.29	-19.86	26.55	34.97
NF	Applications Received	11101	34204	40489	46288	48074	47224	208.12	18.38	14.32	3.86	-1.77
NF	No. of students Appeared	662	972	981	1675	2096	1981	46.83	0.93	70.74	25.13	-5.49
NF	No. of Students Passed	603	849	877	1378	1809	1800	40.80	3.30	57.13	31.28	-0.50
NF	Total number of students present at Campus	2742	3561	4676	5804	6141	6235	29.86	31.31	24.12	5.8	1.53
NF	Total number of Scholars Ph.D scholar	460	637	675	832	965	900	38.48	5.97	23.26	15.99	-6.74
NF	Total number of M.Phil Scholars	304	305	342	330	Nil	Nil	0.33	12.13	-3.51	0	0
NF	Total number of PG Students	1978	2619	3659	4642	5176	5335	32.41	39.71	26.87	11.50	3.07
NF	Total number of Women student	1044	1360	1766	2183	2366	2442	30.27	29.85	23.61	8.38	3.21
NF	Total number of SC student	557	619	826	966	933	872	11.13	33.44	16.95	-3.42	-6.54
NF	Total number of ST student	96	117	232	309	346	348	21.88	98.29	33.19	11.97	0.58
NF	Total number of OBC student	819	1301	1610	1855	1940	2002	58.85	23.75	15.22	4.58	3.20
NF	Total number of Minority students	144	241	419	581	590	617	67.36	73.86	38.66	1.55	4.58
NF	Affiliated colleges students strength	31415	32473	37482	43407	45262	50277	3.37	15.43	15.81	4.27	11.08
NF	Community college strength	458	933	272	535	629	622	103.71	-70.85	96.69	17.57	-1.11
NF	Distance Education strength	10285	12564	5109	4687	4359	8367	22.15	-59.34	-8.25	-6.7	91.94

F = Financial indicator - NF = Non-financial indicator

**Table 2: Reporting of Structural Capital indicators for the year 2011 to 2014 (as on sept., 2013)**

			2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2009-10	2010-11%	2011-12%	2012-13%	2013-14%
		Autonomy											
1	NF	Total No. of chairs, centres, schools and dept	50	60	59	62	64	64	20	-1.67	5.08	3.23	0
		Chairs	2	2	2	2	2	2	0	0.00	0.00	0	0

INTELLECTUAL CAPITAL REPORT: A CASE OF PONDICHERRY UNIVERSITY

		Centres	7	9	10	8	10	10	28.57	11.11	-20.00	25	0
		Schools	9	15	13	15	15	15	66.67	-13.33	15.38	0	0
		Departments	32	34	34	37	37	37	6.25	0.00	8.82	0	0
2	NF	Total No. University programmes offered	101	147	151	146	139	142	45.54	2.72	-3.31	-4.79	2.16
		Ph.d	30	41	43	43	48	49	36.67	4.88	0.00	11.63	2.08
		M.Phil	22	24	24	24			9.09	0.00	0.00	-100.00	
		PG	47	53	53	46	57	57	12.77	0.00	-13.21	23.91	0
		PG Diploma & Certificates	2	29	31	33	34	36	1350.00	6.90	6.45	3.03	5.88
3	NF	Total Number of Hostels	14	14	17	20	20	20	0.00	21.43	17.65	0	0
		Men	9	9	11	13	13	13	0.00	22.22	18.18	0	0
		Women	4	4	5	6	6	6	0.00	25.00	20.00	0	0
		Foreign	1	1	1	1	1	1	0.00	0.00	0.00	0	0
4		Total No. of Student strength in Hostels	1418	1902	2615	3347	3555	3502	34.13	37.49	27.99	6.21	-1.49
		Men	1038	1313	1769	2215	2334	2303	26.49	34.73	25.21	5.37	-1.33
		Women	380	589	846	1132	1221	1199	55.00	43.63	33.81	7.86	-1.80
5	F	Major Research Equipment	9	10	12	15	20	20	11.11	20.00	25.00	33.33	0
		Abstract of Receipt & Payment											
6	F	Part I Non-Plan Recipet	4261.68	6622.99	5266.25	6631.97	7077.86	9222.8		-20.49	25.93	6.72	30.30
7	F	Part I Non-Plan Payment	4396.67	6091.7	5795.76	6678.34	7915.29	9155.07		-4.86	15.23	18.52	15.66
8	F	Part II Plan Receipt	8744.07	8528.69	7912.51	930.33	7616.45	4934.98		-7.22	-88.24	718.68	-35.21
9	F	Part II Plan Payment	5575.1	8681.67	6648.33	933.15	8086	3924.54		-23.42	-85.96	766.53	-51.47
10	F	Part III Earmarked Special fund Receipt	746.85	1512.73	2091.11	7285.16	2300.03	2289.18	102.55	38.23	248.39	-68.43	-0.47
11	F	Part III Earmarked Special fund Payment	9971.77	1141.35	1062.45	1973.42	2367.18	2231.03	-88.55	-6.91	85.74	19.95	-5.75
12	F	Part IV Debt & Deposit, CPF, GPF & University fund Receipt	1359.5	6918.97	2464.53	4511.21	4504.92	2757.74	408.93	-64.38	83.05	-0.14	-38.78
13	F	Part IV Debt & Deposit, CPF, GPF & University fund Payment	645.23	11613.16	1750.52	5676.98	3706.08	2248.04	1699.85	-84.93	224.30	-34.72	-39.34
14	NF	Share of appointed through autonomous formal procedure (The Reservation Policy followed by the University as per Central/State Government)			OBC	SC	ST	OBC					
		Professor				15%	7.50%	Nil					
		Associate Professor				15%	7.50%	Nil					
		Assistant Professor				15%	7.50%	27%					
		Non-Teaching Posts				15%	7.50%	27%					
		Student Admission				15%	7.50%	27%					
15	NF	Total No. of Library Membership (Gate Statistics)	2538	3611	3041	3494	3301	3045	42.28	-15.79	14.90	-5.52	-7.76
		Students	1611	2075	2114	2506	2670	2575	28.80	1.88	18.54	6.54	-3.56
		Researchers	259	725	677	719	394	295	179.92	-6.62	6.20	-45.20	-25.13
		Teachers	220	293	118	39	40	11	33.18	-59.73	-66.95	2.56	-72.50
		Others	448	518	132	230	197	164	15.63	-74.52	74.24	-14.35	-16.75
		Codification of Knowledge through Publications											
16	NF	Research Publication (Publication in indexed journals only)	108	127	186	283	332	394	17.59	46.46	52.15	17.31	18.67
17		Total No. of Faculty Publications	305	Nil	Nil	1021	1271	1390	-100.00	Nil	Nil	24.49	9.36
	NF	Books	46	69	108	85	103	78	50.00	56.52	-21.30	21.18	-24.27
	NF	Research papers	259	502	857	936	1168	1312	93.82	70.72	9.22	24.79	12.33
18	NF	Print (Lakhs)	1.5	1.67	1.75	1.93	2.07	2.09	11.33	4.79	10.29	7.25	0.97
19	NF	Electronic (Lakhs)	0.22	0.24	0.31	0.33	1.21	1.6	9.09	29.17	6.45	266.67	32.23
20	NF	Library collection (Print & Electronic)	1.72	1.91	2.06	2.26	3.28	3.69	11.05	7.85	9.71	45.13	12.50
21	NF	E-Resources Collection	19641	24136	31417	33195	147169	159915	22.89	30.17	5.66	343.35	8.66
22	NF	Citations of Research Publication	12014	12783	13854	14944	15473	15696	6.40	8.38	7.87	3.54	1.44
23	NF	Citation Index	4.9	5.38	6.16	6.21	6.6	6.8	9.80	14.50	0.81	6.28	3.03
24	NF	h Index	29	31	33	40	45	51	6.90		21.21	12.50	13.33
25	NF	E-Resources Usage	295107	597652	756500	754519	854150	1149267	102.5204	26.58	-0.26	13.20	34.55

		(Downloads)							4				
26	NF	Video talks	Nil	Nil	Nil	Nil	1,500	1,500	Nil	Nil	Nil	Nil	0
27	NF	Internet	32mbps	64mbps	64mbps	128 Mbps	200 Mbps	220 Mbps	Nil	Nil	Nil	Nil	Nil
28	NF	Intranet (NME-ICT/NKN link)	Nil	Nil	Nil	100 Mbps	150 Mbps	150 Mbps	Nil	Nil	Nil	Nil	Nil

F = Financial indicator - NF = Non-financial indicator

The Table-2 Report the Structural Capital indicators for the year 2011 to 2014 (as on sept., 2013), shows that 16 indicators are financial indicators and 18 indicators are non-financial indicators. It was found that 6 financial indicators are placed in the first position in 2011-13 followed by one indicator in 2012-13 and 0 financial indicators in 2013-14 and 9 non-financial indicator are placed in the first position in 2013-14 followed by 8 non-financial indicators in 2012-13 and 2 non-financial indicators in 2011-12. It concluded that financial indicator are performing well only on 2011-13 periods, so it has to be increased in every year and non-financial indicators are performing very well in year by year.

- During the year 2011-12 only 15 types of equipment were available in the university and 2012-13 it has been increased to 20 15 types of equipment and there were no changes in the year 2013-14. It has been concluded that the Pondicherry University has provided major research equipment and most of them sophisticated analytical instruments have been provided to computer science and science departments.
- During the year 2011-12, the total grant received Rs. 63.85 crores and total grant utilized Rs. 69.55 crores. In the year 2012-13 total grant received increased Rs. 67.75 crores and total grant utilized only Rs. 67.22 crores, and 2013-14 total grant received have been decreased to Rs. 30 crores and total grant utilized only Rs. 15.86 crores.
- During the year 2011-12, the non-plan total grant received Rs. 66.34 crores and non-plan total grant utilised Rs. 66.78 crores. In the year 2012-13 non-plan total grant received 29.03 crores and non-plan total grant utilised Rs. 39.57 crores. In the year 2013-14 non-plan total grant received Rs. 59.05 crores and non-plan total grant utilised Rs. 49.85 crores.
- The Share of appointment through autonomous formal procedure (The Reservation Policy followed by the University as per Central/State Government) for Professors and Associate Professors is SC 15%, ST 7.50%, OBC 0% and Assistant Professor, Non-Teaching staff and Student for SC 15%, ST 7.50% and OBC 27%.

During the year 2013-14, Research Publication (publication in indexed journals only) is 39.04%, it is higher than the previous two couple of years 2011 (28.04%) and 2012 (32.90%). The finding of research publication indexed journals is increasing at 4.86 % and 6.14 % year by year.

- The faculty published/edited 78 books, 1312 research papers in reputed national and international journals during the 2013-14. The total number of Publications,

being 1941, with citation index of 6.6 and h-index of 45 for the least 17 years of publications of our Faculty, is well above many of the renowned Universities in the country.

- During the year 2013-14, the Library's collection is 3.96 books (including Print 34.31% and Electronic 50.95%) and it increased than the before two couple of years 2011-12 (including Print 31.69% and Electronic 10.50%) and 2012-13 (including Print 33.99% and Electronic 38.53%). The finding shows that printed collection is high at 2.3% in 2012-13 and little bit high in 2013-14 is 0.32% to and Electronic collection high is 28.03% in 2012-13 and 12.42% high to 2013-14.
- The E-Resources collection during the 2011-12 is only 9.75% but after the two couple of the year 2012-13 and 2013-14, it is increased 43.24% and 46.99% respectively. The findings show that 33.49% high to 2012-13 and 3.75% high to 2013-14.
- The citations of research publications are increased every year 2011, 2012 and 2013 which is 32.40%, 33.55% and 34.03% respectively. The difference between the every year increased percentage is 1.15% in 2012-13 and 0.48% in 2013-14.
- The E-resource usage (Downloads) is increased every year 2011, 2012 and 2013 which is 27.42%, 30.94% and 41.63% respectively. The difference between the every year increased percentage is 3.54% in 2012-13 and 10.69% in 2013-14. It is concluded that E-learning process has been initiated.
- During the 2012-13, video talks are launched with 1500 videos are upload in library portal, in the 2013-14 no videos can newly upload.
- Initially Pondicherry University provided internet speed with 128 Mbps, during the 2012-13 year the internet speed is 200Mbps and 2013-14 year provide high internet speed 220 Mbps.
- Initially, Pondicherry University provided intranet (NME-ICT/NKN link) speed with 100 Mbps, during the 2012-13 and 2013-14 periods the intranet speed is increased at 150 Mbps. It concludes online video conferencing using A-view system serves the needs of the University to conduct online seminars, lectures, meetings, etc., across the country. It is concluded that online video conference has been initiated.

**Table 3: Reporting of Relational Capital indicators for the year 2011 to 2014 (as on sept., 2013)**

RELATIONAL CAPITAL			2008-09	2009-10	2010-2011	2011-12	2012-13	2013-14	2009-10%	2010-11%	2011-12%	2012-13%	2013-14%
1	NF	Special Assistance Programme (Departments)	2	12	10	19	21	25	500	-16.67	90.00	10.53	19.05
2	F	Extra-Mural Funding in Crores	27.58	44.69	74.02	84.83	99.61	97.23	62.04	65.63	14.60	17.42	-2.39
3	NF	Collaboration with other Institutions & MoUs	7	14	28	35	37	41	100	100.00	25.00	5.71	10.81
4	NF	Total number of Research Project	179	205	265	340	459	488	14.53	29.27	28.30	35.00	6.32
5	NF	Awards of Research Associateship, Fellowships &	273	519	664	243	267	777	90.11	27.94	-63.40	9.88	191.01

		Scholarships											
6	NF	Seminars, Symposia And Workshops/Short Term Courses Were Conducted By The Departments And Centres Under Various Schools Of The University	85	625	71	103	125	116	635.29	-88.64	45.07	21.36	-7.20
7	NF	Faculties invited lectures in different institutions India and Abroad	224	26	457	650	850	740	-88.39	1657.69	42.23	30.77	-12.94
8	NF	DST-FIST	5	6	7	9	10	12	20	16.67	28.57	11.11	20

F = Financial indicator - NF = Non-financial indicator

The Table-3 reports the Relational Capital indicators for the year 2011 to 2014 (as on sept, 2013), shows that 5 indicators are non-financial indicators and one indicator are financial indicators. It was found that highest performance of NF activities are made in the 2013-14 academic year that is 4 indicators are placed in the first position (MoU 36.28%, Research Project 38.03%, Seminars/Symposia and Workshops/Short-Term Courses) were conducted by The Departments and Centres. Under Various Schools of the University, 116 Faculties were invited for lectures in different institutions in India and Abroad. 740 followed by the year 2012-13 Extra-Mural funds 35.36%.

- The Collaboration with other Institutions & MOUs 2011-12 (35), 2012-13 (37) and 2013-14 (41). The findings show that every year MOU has increased. It concludes that collaboration with other Institution's relationship, research and academic capacity of the university is strong.
- During 2013-14, 116 seminars, symposia and workshops/short-term courses were conducted by the Departments and Centres under various schools of the university. The faculty of Pondicherry University visited various institutions and universities in India and abroad for academic interactions. The faculty members have delivered 740 invited lectures in different institutions.

**Table 4: Measuring the Financial and Non-Financial Indicators**

S. No.	Components of Intellectual Capital	Financial Indicators	Non-Financial Indicators
	<b>HUMAN CAPITAL</b>		
1	Total number of Ph.D. Theses		+
2	Total number of M.Phil Dissertations		=
	<b>TOTAL NUMBER OF TEACHING AND NON-TEACHING STAFF</b>		
	<u>Faculty growth</u>		
3	Professors		-
4	Readers/Associate Professors		=
5	Lectures/Assistant Professors		-
6	Total Faculty growth		-
	<u>Non-Teaching staff</u>		
7	4a. Statutory Officer/Group A&B Officers/Group C staff and Group D staff		Nil
8	4b. Consolidated/Contract/Daily wages/ Others (retired and re-engaged)		Nil
9	Total non-teaching staff		Nil
	Total number of students at present		
	At Campus		
10	Total number of Scholars Ph.D scholar		+
11	Total number of PG Students		+
12	Total number of Women student		+
13	Total number of SC student		-
14	Total number of ST student		+
15	Total number of OBC student		+
16	Total number of Minority students (Christians+Muslims+Others)		+
17	Affiliated colleges students strength		Nil
18	Commuity college strength		Nil
19	Distance Education strength		Nil
	<b>STRUCTURAL CAPITAL</b>		
	<u>Autonomy</u>		
20	A Central University established under the Pondicherry University Act 1985	=	
21	Major Research Equipment	=	
22	Amount of budget constraints (personnel cost + equipment cost) / Research Budget (In Crores)		
23	Total Grant Received	-	
	Total Grant Utilized	-	
24	a. Building	-	
25	b. Equipment's	-	
26	c. Books	-	
27	d. Salary	-	
28	e. Others	-	

	Non-Plan		
29	Total Grant Received	-	
30	Total Grant Utilized	-	
31	Salary	-	
32	Retirement Benefits	-	
33	Other charges	-	
	Pondicherry university community college		
34	Community College- Puducherry 132.70 laks	Nil	
35	Community College- Mahe 116.20 lakhs	Nil	
	Share of appointed through autonomous formal procedure (The Reservation Policy followed by the University as per Central/State Government)		
36	Professor		=
37	Associate Professor		=
38	Assistant Professor		=
39	Non-Teaching Posts		=
40	Student Admission		=
41	Codification of Knowledge through Publications		
42	Research Publication (Publication in index journals only)		
43	Faculty Publications		+
44	Books		+
45	Research papers		+
	Library Collection		
46	Print (Lakhs)		+
47	Electronic (Lakhs)		+
48	Library collection (Print & Electronic)		+
49	E-Resources Collection		+
50	Citations of Research Publication		+
51	E-Resources Usage (Downloads)		+
52	Library Users (Gate statistics)		-
53	Video talks		=
54	Internet		+
55	Intranet (NME-ICT/NKN link)		=
	RELATIONAL CAPITAL		
56	Special Assistance Programme (Departments)		Nil
57	Extra-Mural Funding in Crores	-	
58	Collaboration with other Institutions & MoUs		+
59	Total number of Research Project		+
60	Seminars, Symposia And Workshops/Short Term Courses Were Conducted By The Departments And Centres Under Various Schools Of The University		Nil
61	Faculties invited lectures in different institutions India and Abroad		Nil

+ (Increase), - (Decrease), = (No Changes) and Nil (No Information Provided)

From the Table - 4, overall 61 indicators are selected in that 19 indicators are Human Capital (19 indicators are non-financial indicators), 34 indicators are Organizational Capital (16 indicators are financial and 18 indicators are non-financial) and 6 indicators are Relational Capital (1 indicators are financial and 5 non-financial). In Human Capital 7 Positive, 4 negative, 2 equal and 6 Nil symbols are presents, the most of indicators shows students strength is increased and faculty strength decrease, Structural Capital ( financial indicators like 0 positive, 12 negative, 2 Nil and 2 equal symbols) and (non-financial indicators 11 Positive, 7 equal symbols) are presents, it means that NF indicators are performing well in structural capital and Relational Capital

(only one financial indicator that are negative symbol) and (non-financial indicators 2 positive, 3 Nil symbols) are presented, it means that financial indicators are decrease and non-financial indicators are increased but most of the information are not available in the relation capital.

#### CONCLUSION

Higher Education Institution in India plays the crucial role in the generation of the knowledge base and for the growth of modern societies. Regarding the significance of intangible resources in the higher education institution, intellectual capital is approaching seem to be needed in order to improve the internal and external management. Also, IC measuring, managing and reporting are gaining importance not only in firm level but are highly useful in universities and research organization. The organization such as OECD, the European Union, World Bank, RICARDIS document, which strongly

recommends the disclosure of intellectual capital information. Austrian university sector adopted, where Intellectual Capital Reporting (ICR) mandatory for all higher education institution by Federal Law. IC model is not a usual model moreover, collecting the information from the different indicator of the organization. Hence, the ICU report is a new model to disclose homogenized, detailed and presenting IC information in a single document.

The OEU strategic matrix indicators reveal more strategic information to academic authorities, faculties, students and public. Hence, ICR is gaining importance for every day, so acknowledged that there is a crucial need for measuring and managing intellectual capital in universities.

#### REFERENCES

1. Austrian Research Centers (1999), Intellectual Capital Report 1999, Austrian Research Centers, Vienna.
2. Austrian Research Centers (2000), "Intellectual Capital Report 1999". Austrian Research Centers, Seibersdorf.
3. Austrian Research Centers (2002) "Intellectual Capital Report 2001". Austrian ResearchCenters, Seibersdorf.
4. Austrian Research Centers (2005) "Intellectual Capital Report 2004". Austrian Research Centers, Seibersdorf
5. Córcoles, Y. R. (2013). Intellectual capital management and reporting in European higher education institutions. *Intangible Capital*, 9(1), 1-19.
6. Danish Ministry of Science, Technology and Innovation (2003), "Intellectual Capital Statements-The New Guideline".  
[http://www.videnskabsministeriet.dk/cgibin/doc-show.cgi doc\\_id =138091 & leftmenu =PUBLIKATIONER](http://www.videnskabsministeriet.dk/cgibin/doc-show.cgi doc_id =138091 & leftmenu =PUBLIKATIONER).



7. Deninson, E.F. (1962), *The Sources of Economic Growth in the United States and the Alternatives Before Us*, Committee for Economic Development, New York, NY.
8. Dhillon, M. (2010). *Intellectual Capital in a University: A Case of Panjab University, Chandigarh, India*. Chandigarh, India (December 1, 2010).
9. European Commission (2005b), RICARDIS (Reporting Intellectual Capital to Augment Research, Development and Innovation in SME's).
10. European Commission (2000b), *Making a Reality of The European Research Area: Guidelines for EU Research Activities (2002-2006)*, COM (2000) 612 Final, European Commission, Brussels.
11. Gorey, R.M. and Dobat, D.R. (1996), "Managing in the Knowledge Era", *The Systems Thinker*, Vol. 7 No. 8, pp. 1-5.
12. Lev, B. (2000), "Intangibles: management, measurement and reporting", available at [www.baruch-lev.com](http://www.baruch-lev.com).
13. Leitner, K. H. and Warden, C. (2003), "Managing and reporting knowledge-based resources and processes in research organizations: specifics, lessons learned and perspectives", *Management Accounting Research*, Vol. 15 No. 1, pp. 33-51.
14. Leitner, K-H (2005). "Managing and Reporting Intellectual Capital in Public Research Organizations and Universities: Background, Development and Experiences of Austrian Organizations". Paper submitted to the 1st Workshop on "Visualising, Measuring, and Managing Intangibles and Intellectual Capital". Ferrara 18-20 October 2005.
15. Das, M., Pal, S., Ghosh, A. Family history of type 2 diabetes and prevalence of metabolic syndrome in adult Asian Indians (2012) *Journal of Cardiovascular Disease Research*, 3 (2), pp. 104-108. DOI: 10.4103/0975-3583.95362
16. Paloma Sánchez, M., Elena, S., & Castrillo, R. (2009). Intellectual capital dynamics in universities: a reporting model. *Journal of Intellectual Capital*, 10(2), 307-324.
17. Paloma Sánchez et al. (20013). A European Research Arena on Intangibles (E\*KNOW-NET)
18. PRIME-OEU GUIDE-THE ICU REPORT (2006), available at [http://www.uam.es/personal\\_pdi/economicas/palomas/the%20intellectual%20capital%20report%20for%20universits.pdf](http://www.uam.es/personal_pdi/economicas/palomas/the%20intellectual%20capital%20report%20for%20universits.pdf).
19. Santosh Nemichand Kale, Sharada Laxman Deore. "Emulsion Micro Emulsion and Nano Emulsion: A Review." *Systematic Reviews in Pharmacy* 8.1 (2017), 39-47. Print. doi:10.5530/srp.2017.1.8
20. Pondicherry University Prospectus 2011-12.
21. Pondicherry University Prospectus 2012-13.
22. Pondicherry University Prospectus Year 2013-14.
23. Sanchez, M. Paloma, Elena, Susana (2006), "Intellectual capital in universities", *Journal of Intellectual Capital*, Vol. 7 (4), pp. 529-548.
24. SÁNCHEZ, P.; ELENA, S. (2005). Managing Intellectual capital in Public Universities.-The Autonomous University of Madrid Example, Proceedings of the 1st Workshop on Visualising, Measuring, and Managing Intangibles and Intellectual capital. Ferrara (Italy).
25. Solow, R. (1957), "Technical change and the aggregate production function", *Review of Economics and Statistics*, Vol. 39, pp. 312-20.
26. [www.pondiuni.edu.in](http://www.pondiuni.edu.in)
27. <http://www.ingenio.upv.es/en>
28. Warden, C. (2003), "Managing and reporting intellectual capital: new strategic challenges for HEROs", IP Helpdesk Bulletin, No. 8, April/May, available at: [www.ipr-helpdesk.org/newsletter/8/pdf/EN/N08 EN.pdf](http://www.ipr-helpdesk.org/newsletter/8/pdf/EN/N08%20EN.pdf).