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Efficacy Of Richard Nolan Growth Model In HRIS -A Study With Special Reference To Medium Scale Textile Industries

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ABSTRACT

This paper deals with efficacy of technologies in system and evaluates, assesses the stages of growth model in HRIS paving to e-age. The momentum of liberalisation, required a change in the corporate strategies followed by the organizations. Researchers have struggled for decades to develop stages of growth models that are both theoretically founded and empirically validated. In this research study it confined to levels of abiding to the stages of growth model of MIS/HRIS concepts in medium scale textile industry. As the core part of the study concerns with the concepts of MIS/HRIS that form the foundation for all IS implementation of strategic significance. The study is thus has wide range in significance to all industries implementing MIS/HRIS irrespective of their size and turnover. The findings of the study are purported to their significant impact on academic students and industry equally. Further research based on an 'evolutionary' view of computing growth is suggested as a means of improving theories of computing in organizations.

Keywords : MIS, Human Resource Information System, Nolan Model, Stages of Growth Model

Introduction

Digitalizing of corporate process is the need of the hour in electronic era. In this phase Information Systems and Information Technology paving significance to core elements of managerial reform and in particular to Human Capital. Information Technology is considered as the value addition for all businesses across the globe. The dynamic nature of human mind always spots to challenges for professionals and developers of Information Systems. To ensure success the primary need is nurturing, developed, motivating and rewarded employees apparently for business expansion. In corporate the discipline Human Resources certainly floor in identifying, hiring, developing right competency, and motivating continuously through time tested HR practices.

In information oriented world, common business model to define structure for HRMS component design and HRMS component is inevitable. The market for HR component applications will drive the need for an industry standard and the business community will develop and maintain it. Presently, the demanding need from information systems is to sculpt an accurate firm model which provides dedicated, sustainably targeted, relevant information instead of swamp and large amount of data rising at a speed of thought.

The earliest model of these innovations/sculptures/replicas brought into life by many researchers in midst of 18th century. Among the most continuous evolving model with several needed and proved paradigms is Growth Model. The work of his squad is exemplary and zenith admirable thesis. This model was the most citing of computing evolution in organizations. This model of Richard Nolan which is by nature ever evolving and does not appear as single model but rather in many number of versions developed in between 1969 and 1979. The panel of Richard Nolan with a futurist view has digested and realized the emergence of Web technologies. The team of Nolan consists of remembered researchers like Gidson, Earl, Hirschhein et al., Bhabuta, Galliers and Sutherland. At first the first light ray of model has been into this world in 1973 in Communication of the ACM. To assess and to study efficacy of characteristics of changes in computing organizations, Nolan made the assumption that changes in the amount organizations spend on computing can serve as a surrogate measure for change in a wide array of environmental and technical variables, including changes in industry conditions, corporate sales, organizational strategy, management practices and uses of computer technology.

Richard Nolan has considered the first researcher to provide a structured outline to explain the computing evaluation within organizations. He is also the first to have presented a theoretical description of the phases dealing with the planning, organizations and the control of activities in association with the management of computer resources in the organization. Nolan developed a model which permitted to determine the degree of computing maturity of a company by taking into account the evaluation of information technologies as an organizational learning process. From its beginnings as tentative hypothesis, it has become regarded as an empirically grounded theory and an accepted description of how changes in organizational information systems take place over time. However, the ample puff up awareness on this model engrossed, given the importance of the model in the Information Systems field and the interpretations of data and prescription for management based upon it such a review is over due. This paper tracks the evaluating growth development of a concept contributes significantly to the development of a study, present research addresses the maturity of growth of Information Systems within an organization influencing the extent and type of Information System used in the organization seek the opinion from respondents for the elements of Nolan Concepts. The study hence considers assessing and ascertaining the statuesque of the concept as highly contributive.

Stages of Growth Model is result of decades of rigorous struggle of research team of Richard Nolan contribution to model has undergone much evolution which has been brought into the world from his realistic thesis that all corporate went through technological transformation of four stages of growth. In later phases, it was sculpted, remodeled and reengineered at par to need of the hour with ample number of intermediate growth stages. Nolan model was used as the source of consultancy studies in earlier periods, as the time passes it has become built-in in zenith corporate information system's planning. Moreover of this every evolutionary technological upgrading phases of process must be planned, managed and coordinated. The phases or stages are as follows:

APPLICATION PORTFOLIO: the set of applications which the information systems must support. For example financial planning, order processing, on-line customer enquiries.

DP Organization: the orientation of the data processing for example as centralized technology drives as management of data as a resource. DP Planning and Control: for example degree of control, formalization of planning process, management of projects, and extent of strategic plans.

The model relies on the organizations computer and information technology budget to determine the different stages of the computer evolution. Indeed, according to Nolan, the penetration and usage model of IT in the organization very much resembles the growth model of the computer budget. He has, moreover used the latter as a substitute for developing his model of computer maturity.

Initiation phase: after one computer acquisition, slow annual increase of computer budget;

Contagion phase: decreasing annual increase of annual computer budget;

Integration phase: Slow annual increase of computer budget;

In general, these stages Data Administration and Maturity of computer development show how IT along with organizational and managerial strategies evolves with time. Organizations progress therefore through a number of successive and identifiable phases and each phase reflects a particular level of maturity in terms of use and management of IT within the organization.

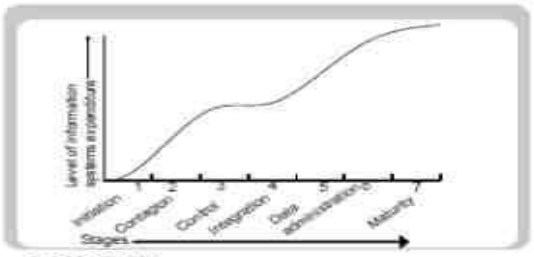


Fig. 1.7-Nolan Model

IT as a Catalyst to Human Resource

From several decades personal departments pragmatically viewed as cost-centers. In rapid changing minutes the appetency of transforming themselves from administrative cost-centers to strategic partners in delivering further business value with the help of information technology demand popped up to peak. The evolution and innovations in ICT of web era the heightened demand to support the strategic business objectives with an exceptional focus on shareholder value have headed to transforms in both job content and expectations of human resource professionals. According to Richard Stanger described IBM's elaborate, highly technology-enabled talent development processes which enable the company to assess and track talent on both a bottom up and top down basis. “We've devoted a lot of effort to this whole process,” said Stanger. “Everything except decision making and the communication is automated. It's a combination of performance appraisal and individual development plans, and the degree of execution against those plans is taken very, very seriously.” Stanger said the automation has enabled execution to be pushed out to management, supported by a 'pretty thin' line-embedded HR team. “There's a lot of management time diverted to pulling this off,” Stanger explained, “to really making a commitment to tagging people, learning about their development, seeing that the development opportunities happen, and making objective assessments about who will be elevated and who will be dropped”. [http://www.tuck.dartmouth.edu/cds-uploads/publications/pdf/Round_Overview_GainCompAdv.pdf] Strategic human resource management derives its theoretical significance from the resource-based view of the firm that treats human capital as a strategic asset and a competitive advantage in improving organizational performance [Becker & Huselid, 2006].

In the literature, many academicians addressed the growing need to cost justify the human resource function, and according to Gerardine DeSanctis,(1986: 15)

'Recent developments in technology have made it possible to create a real-time information-based, self-service, and interactive work environment. Personnel Information Systems have evolved from the automated employee recordkeeping from the 1960s into more complex reporting and decision systems of late'

The pragmatically seen factuality after invading information technology to corporate functions that too focusing towards human resource operations which was believed as cost centre changed the paradigm and proved in putting the cost of operations (HR) and facilitating to efficient decision making process and thus this necessitates human resource departments the need of Human Resource Information System (HRIS). But it is observed in today's industry the executive technological adoption levels were low even it is available at accessible, friendly and at affordable rates in market. Hence forth, it is also evident that they are potential in retrieving and storage of employee information in Management Information System reports. This is theme of the present study which will assesses the support and benefit levels of Nolan Model (Technology evolution) in Human Resource Information systems in the medium-scale textile industries.

Contributions to Organizational Performance: Company capabilities are those competencies which a firm has that allow it to perform in strategically important ways. They are different than the core competencies which are often identified as competitive advantages for organizations in the business strategy literature (Prahalad nad Hamel, 1990). Core competencies are the technical capabilities that an organization has. Organizational capabilities are organizational learning that exists about how to function effectively as an organization in ways that lead to superior products and/or services. The augmented use of performance capabilities paves to competitive advantage and value addition. They rest in the management systems an organization creates and in the knowledge and understanding of employees about how the organization works and how to get things done. The augmented usage of technologies for the altered focus of the human resource management function as adding value to the organization's Return on Investment. However, the innovations in systems and technologies proved their value in reducing monotonous, clerical activity and personnel volume necessary to facilitate the functional process. Simultaneously on the other hand it was recognized that such payroll system were very potential in data storage and evoking employee information, including data about jobs, pay, cost, absence levels and personal data. This stirred demand for relevant, appropriate information quickly paved to the innovations of applications in Human resources function and in operations to base strategic decisions of the organization.

Review Of Literature

Nineteen years ago Beckhard and Harris (1987) said that the world in which organisations exist, and will be operating in future, is continuously in change. It changes in relationships among nations, institutions, business partners and organisations; changes in the makeup of the 'haves' and the 'have nots;' changes in dominant values and norms governing societies. It also changes in the character and culture of business or wealth producing organisations; changes in how work is done and changes in priorities. The core dilemma for leaders and managers is how to maintain stability and at the same time provide creative adaptation to outside forces, change assumptions, technology, working methods, roles, relationships and the culture of the organisation. Today, these changes are still taking place and there are still more changes to come in the future, as Beckhard and Harris (1987) envisaged. Certainly the emergence of Information Technology, especially internet-enabled technology has affected and enhanced many management areas that include HR management. The decreasing costs of computer technology versus the

increasing costs of employee compensation and benefits made acquisition of computer-based HR systems (HRIS) a necessary business decision.

[Michael et al., 2008] Florkowski et al., (2006) in their research paper: 'The diffusion of human-resource information technology innovations in US and non-US firms', evaluated the diffusion of information technologies that are transforming HR service-delivery and revealed that the modest correlation between the number of acquired Information Technologies (IT) and HR-transactions automation supports the general call for more formalized HR-technology strategies at the firm level to coordinate purchasing and implementation decisions.

Lengnick-Hall and Moritz (2003:1-3), who predicted that HR's responsibility would shift from hands-on, face-to-face, service delivery to system design and maintenance functions. Consequently, HR professionals will need more information technology knowledge and skills than they have had in the past. Providing e-HR will enable HR to play a more consultative role with line managers and take a more active role in the organisation's strategy formulation and implementation. Thus, HR professionals with knowledge and skills in both HR and information technology will be uniquely positioned to make the HR function a value adding contributor to their organisations.

John Gill et al., (2010) described the HRIS is a computerized system typically comprising a database or inter-related databases that track employees and their employment-specific information. Broderick (1992) states that HRIS can influence effectiveness in four ways: Firstly, with emphasis on increased productivity from the workforce, recruitment, short term working, temporary, and less redundancies. Secondly, it deals with the increasing demands made be legislation, which related to HR practices and the increased need to produce statistics for government. The third factor was the rate of the development of computer technology. The final factor was the increased availability of HRIS at lower costs. The professional body argued that effective HRIS use leads to enterprise efficiency.

Purpose of the Study

The objective of the research study is to assess and evaluate the support levels of stages of technological growth in the human resource information systems (HRIS) of the medium-scale textile industries.

Methodology

The present conclusive study is in the specialized area of HRIS with reference to the Stages of Growth Model of Management Information Systems (MIS) in the medium-scale textile industries of Hyderabad.

RESEARCH DESIGN	
Primary Data :	Hyderabad based medium and large scale industries
Secondary Data :	Industrial Directory and websites
Sample Universe :	Employees of textile companies working in HR management
Sample Frame :	HRIS implementing industries in Hyderabad City
Research Tool :	Five Point Likert Scale Questionnaire
Sample Size :	96
Sampling Technique :	Stratified Random Sampling

Sampling Design

The study precisely selected the following employees in the pre-defined approximate ratio of 1:3:5 as respondents from the different medium-scale textile industries of Hyderabad.

Table 1: Roles of Respondents

EMPLOYMENT TYPE	NO. OF RESPONDENTS
HR Manager	10
HR Coordinators	32
HR Assistants	54
To tal	96

Methods of Data Collection

A pre-tested, well structured questionnaire is used for the data collection. The questionnaire was distributed to the selected respondents of the medium-scale textile industries and their opinion is recorded on 5-point Likert-scale. Further the collected field survey data was processed and prepared the primary data which is the basis for the further data analysis and conclusion.

One of the pivot stratums of present research study is to assess the support levels of Nolan Model in HRIS using the primary data pertaining to usage intensity of HRIS alongside demographic factor: Occupation of the respondents. Cumulative weighted average (CWA) technique was used for the data analysis.

Levels of HRIS Supports

The data pertaining to the Nolan Model Stages support levels of HRIS in the respondents' respective organizations are presented in the table 2 and the same is depicted in the form of bar chart in figure 1.

Table 2: Nolan Support Levels of HRIS

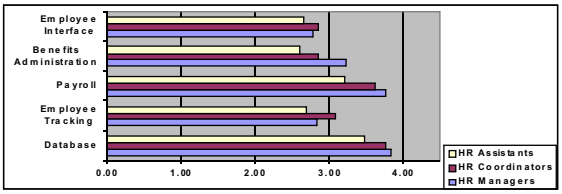
Occupation Category	Nolan Stages – Ratings (in WA)						
	Initiation	Contagion	Control	Integration	Data Administration	Maturity	Average Weightage
HR Managers	3.81	2.82	3.21	3.76	2.77	2.34	3.27
HR Coordinators	3.76	3.07	2.85	3.61	2.85	2.10	3.22
HR Assistants	3.47	2.68	2.59	3.20	2.64	2.33	2.92
CWA	3.68	2.86	2.88	3.52	2.75	2.53	3.14

(Source: Field Survey)

WA: Weighted Average (also called Weighted Mean)

From table-2, the CWA value of 3.68 offered to Initiation stage of Nolan Model on 5-point mean rating scale confirms that medium-scale textile industries are amply capable of managing and accessing the related information with the help technology provided to them. Similarly the high CWA value of 3.52 offered to Integration on 5-point scale indicates that they are quite competent to maintain and manage the information assessing related operations with fewer issues with the help of HRIS. In contrary, the CWA values of less than 3.0 on 5 point scale offered to HRIS components of Contagion, Control, Data Administration and Maturity phases brings into spotlight regarding the moderate support levels of Technology offered towards the system. The study recommends Enhancements and implementation of technological upcoming innovation at par compatibly to improvements in the HRIS system and also repetition of all HRIS training programs, of course, with an added intensity.

Figure 1: Support Levels of



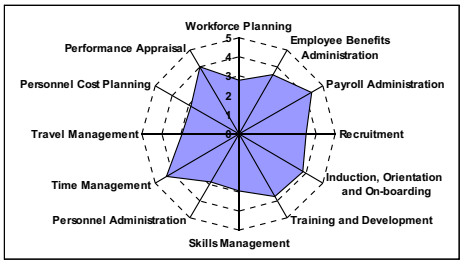
Benefits Derived from HRIS

The data that was collected through questionnaire in order to assess the benefits of HRIS is processed and presented in the table 3 and the same is depicted in the figure 2.

Table 3: Variables Of HRIS Benefits

Variables	Weighted Average
Workforce Planning	2.77
Employee Benefits Administration	2.96
Payroll Administration	3.92
Recruitment	3.51
Induction, Orientation and On-boarding	3.86
Training and Development	3.72
Skills Management	2.94
Personnel Administration	2.86
Time Management	3.91
Travel Management	2.95
Personnel Cost Planning	2.85
Performance Appraisal	3.97
Average	3.35

Figure 2: Benefits of HRIS



The table- 3 demonstrates the overall benefits attained with the help of HRIS with the CWA value of 3.35 on 5-point mean rating scale, reveals that Hyderabad based medium-scale textile industries are attaining only nearer to 2/3 of the value additions from technologies provided in the system. Precisely, the variables with average score ≥ 3.5, Payroll Administration, Recruitment, Induction, Orientation and On-boarding, Training and Development, Time Management and Performance Appraisal are providing relatively high benefits through HRIS phases and technologies within the corporate system. But, the remaining variables with CWA score less than 3.5, Workforce Planning, Employee Benefits Administration, Skills Management, Personnel Administration, Travel Management and Personnel Cost Planning signifies for immediate actions on improving, enhancing and sculpting models compatibly to management information system model in order to attain the utmost value additions of technologies to personnel than present.

Results and Discussions

The technological and web phases support to the HRIS components clearly indicates that medium-scale textile industries are still shelled behind the appropriate, wise and wide usage of information technology. Firms must first recognize the importance of evolution and support to existing systems, and then enhance, upgrade the systems in order to look up the organization's performance. The companies are able to attain only 2/3 of the benefits from HRIS and its supportive technologies and losing the remaining 1/3 of value additions. This evidently indicates that the technological support levels must be improved in order to realize the overall return on investment and at par to performance with continuing value additions to work life balance of employees from the HRIS.

Conclusions

The study confirms that the technological evolution and implementation for support levels in medium-scale textile industries towards the HRIS is highly moderate and suggest for renovation in thinking of improvements and enhancement in HRIS to effectively and efficiently use the system in order to attain the maximum benefits. The researchers recommend that firms must improve the weak areas of Management Information Systems models Compatibly to HRIS systems and popup the revenues through the following modules: Employee Tracking, Benefits Administration, Employee Interface and HR departments must have virtuous rapport and communication with other departments especially to overcome the identified interdependent problems such as Workforce Planning, Employee Benefits Administration, Skills Management, Personnel Administration, Travel Management and Personnel Cost Planning.

REFERNCES

Broderick, R & Boudreau, J.W (1992), Human Resource Management, Information Technology and the Competitive Edge, Academy of Management Executive, Vol. 6, No. 2, May, 1992. | Bussler, L., & Davis, E. (2002), Information systems: The quiet revolution in human resource management. Journal of Computer Information Systems, 42(2), 1720. | Cascio, W. F. (1984), Costing human resources: The financial impact of behavior in organizations, PWS-Kent, Boston, p14. | Beckhard, R. and Harris, R. 1987. Organisational Transitions. 2nd ed. Reading: Addison Wesley. | Galliers R.D. and Sutherland A.R. (1991). Information systems management and strategy formulation: the 'stages of growth' model revisited. Journal of Information Systems, 1, 89-114. | Gottschalk, Petter (2002). "Toward a Model of Growth Stages for Knowledge Management Technology in Law Firms". Informing Science 5 (2): 81-93. | Nolan R.L. (1979). Managing the Crisis in data Processing. Harvard Business Review, March-April,115-26. | Nolan R. (1984). Managing the advanced stages of computer technology: key research issues. In The Information Systems Research Challenge (McFarlan F.W. ed.), pp. 195-214. | Scott Morton, M.S. ed. (1991). The corporation of the 90s: Information Technology and Organizational Transformation. Oxford: Oxford University Press | Lengnick-Hall, M. and Moritz, S. 2003. The impact of e-HR on the human resource management function. Journal of Labor Research, Summer 2003, Vol 24, (3): 1-3.