Chapter II

Literature Survey

2.0   Introduction

This chapter has three major sections; Review of the literature on Organizational Intelligence (OI), Organizational Learning (OL) and Organizational Performance (OP). The literature review brings out the models that had been used to measure OI, OL and OP, various constructs that are common and uncommon between the three topics of research. This literature also will list down different types of definitions of OL, OI and OP. There are tables displayed that discuss different constructs of definitions and their implications. The similarities and differences between OL and OI are listed which indicate the absence of definite demarcation between these two variables of organizations. This also enables us to have the clarity in differentiating OL and OI as there are many common variables that describe OI and OL. Section 2.1 discusses the literature about OL, section 2.2 about OI and section 2.3 about OP respectively. Section 2.4 discusses the findings and inferences from literature. Section 2.5 concludes the chapter.

This chapter presented in two parts. First part discusses the Literature Study enabling the understanding of the first part of the research Objective of identifying different components of Organizational Intelligence. The second part

lists the literature that is required to explore the linkage between organizational intelligence and organizational performance.

Part I

2.1 Organizational Learning (OL)

This survey Research studies show that OL is constructed by many factors that are also the constructs of OI. It is appropriate to study what is OL. This will enable one to clarify the demarcation between OL and OI before exploring OI and OP and the relationship between them.

(Peter Senge, 1990)[4] in his Book "The fifth Discipline" discusses about the learning organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together. He explains the five key disciplines of learning organizations are systems thinking, personal mastery, mental models, shared vision and team learning. In this book he sets a direction for defining what organizational learning through these models as attributes exhibited by learning organizations.

Learning organizations open up boundaries and stimulate the exchange of ideas amongst employees and business functions (Garvin, 1993)[5]. As the first emanate of OL as a separate subject of study in India, Dr. Madhukar Shukla of XLRI Business School states that the ability to generate and acquire new knowledge is becoming an essential prerequisite for success of organizations. He integrates both these approaches and focuses not only on how organizations learn, but also on how they can (and do) use knowledge and learning as strategic weapons to

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4 Peter Senge, "The Fifth Discipline", 1st ed., Currency pb: NewYork; 1990
5 D. A., Garvin, (1993), "Building a Learning Organization", Long Range Planning, Vol.26 (6), p152-152

transform their operating paradigms through a framework called 'competing through knowledge' (Madhukar Shukla, 1997)[6].

Communities of practice can drive strategy, generate new lines of business, develop people's skills, and help companies recruit and retain talent. Group of people who work together can create learning for an organization (Etienne. C. Wegner, WilliAm M Snyde, 2001)[7]. Organizations with people who talk smart as an effect of knowing more may not act on the know-how. This gap makes organizations perform poorly. True learning in an organization does not happen when People articulate effectively on what they know than acting on applying the learning for better performance. Know How - Knowledge and action gap affects organizations (Jeffrey Pfeffer, Robert Sutton, 2001)[8]. Knowing too much on business processes and stringently systematizing might lead to lose the knowledge that may be obtained from the system and its design. Key Learnings of an organization is lost when knowing and systematizing than grasping the tacit knowledge in those business processes (John Seely Brown, Paul Duguid, 2001)[9].

Codification strategy, Personalization strategy and Competitive strategy must drive Knowledge Management Strategy for Learning Organizations. Requirement of stable IT infrastructure for managing knowledge is addressed as a key need for a learning Organization (Morten Hansen, Nitin Nohria, Thomas Tierney, 2001)[10]. Organizations learn in many different ways. Double loop learning - a process of asking questions not only about the facts but also about the reasons and motives behind the facts - encourages organizational learning through introspection, taking responsibility for one's behavior and enables

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6 Madhukar Shukla, "Competing Through Knowledge: Building a Learning Organization", Sage Pb; 1997

[7] Etienne. C. Wegner, WilliAm M Snyde, "Communities of Practice - The Organizational Frontier" , Harvard Business Review on Organizational Learning; Harvard Business School Press, 2001

[8] Jeffrey Pfeffer, Robert Sutton, "The Smart Talk Trap", Harvard Business School Press, 2001

[9] John Seely Brown, Paul Duguid, "Balancing Act -How to Capture Knowledge Without Killing It"; Harvard Business Review on Organizational Learning, Harvard Business School press; 2001

[10] Morten hansen, Nitin Nohria, Thomas Tierney, "What's Your Strategy for Managing Knowledge?", Harvard Business Review on Organizational Learning; Harvard Business School Press, 2001

organization to learn. Single loop learning blocks communication in a learning organization (Chris Angris, 2001)[11].

Coevolving is a synergic way for learning (Kathleen Eisenhardt, Charles Galunic, 2001)[12]. Graphical depiction of organizational actions and functions will reveal the gap in competitive forces and plans in an organization. Graphical Documentation and Learning of business functions and actions lead to OL. Identifying key objects that enable OL through Organigraph is an efficient mode of learning (Henry Mintz berg, Ludo vander Heyden, 2001)[13]. Firefighting amongst employees spoils organizational productivity and learning. Employee relationship matters much for a conducive environment for learning (Roger Bohn, 2001)[14].

There is an interesting perspective on organizational learning by Martin et al, which says that 'Work Process Knowledge' brings a fact that New forms of work demanding workers' knowledge and skill. The findings, based on a new set of investigations in a wide range of manufacturing and service industries, identify the kinds of knowledge acquired through learning is the key driver for innovative methods of functioning in an industrial organization (Martin Fischer, Nicholas Boreham and Renan Samurcay, 2002)[15].

The Author of the book 'Unlearning the Fifth Discipline' states that the basic characteristics of a learning organization lie in the emphasis on a continuous learning strategy and culture, flexible rewards and structures, participative decision-making and open communications. This image is distinctly different from the conventional notion of an organization. The author mentions various

[11] Chris Angris, "Good Communication that Blocks Learning"; Harvard Business Review on Organizational Learning; Harvard Business School Press; 2001

[12] Kathleen Eisenhardt , Charles Galunic, "Coevlolving - At last a Way to Make Synergies Work", Harvard Business Review on Organizational Learning; Harvard Business School Press; 2001

[13] Henry Mintz berg, Ludo vander Heyden, "Organigraphs - Drawing How Companies Really Work"; Harvard Business Review on Organizational Learning; Harvard Business School Press; 2001

[14] Roger Bohn, "Stop Fighting Fires"; Harvard Business Review on Organizational Learning; Harvard Business School Press; 2001

15 Martin Fischer, Nicholas Boreham and Renan Samurcay; "Work Process Knowledge", Illustrated Ed, Routledge Pb; 2002

factors and forces that contribute to the changing profile of the organization-turbulent and unpredictable business environment, stringent customers and demanding share holders. In short the drivers of learning in an organization are, organization-turbulent and unpredictable business environment, stringent customers and demanding share holders largely (Devi akella, 2003)[16].

Henrich Greve offers an intriguing analysis of how firms evolve in response to feedback about their own performance. Based on ideas from organizational theory and social psychology and research from many industries, it demonstrates that high-performing organizations quickly lower their rates of market entry, innovations and asset growth, but low-performing organizations only slowly increase those rates. The analysis outlines the consequences of this behavior for organizational survival and performance, and suggests ways to improve organizations with performance feedback. Organizations learn from performance feed back systems. Learning Organizations are high-performing organizations which can quicken the process of lowering their speeds of market entry, fasten innovations and asset growth (Henrich Greve, 2003)[17].

Learning Transfer in Organizations is a novel concept introduced by a group of authors who address transfer of learning at individual and organizational levels. This book by Elwood F. Holton, Timothy T. Baldwin shows how to diagnose learning transfer systems, create a transfer-ready profile, and assess and place employees to maximize transfer. The book includes information on how to determine what process should be followed to design an organization-specific learning transfer system intervention. The authors focus on the actual learning process and show how to use front-end analysis to avoid transfer problems. Issues associated with such popular work-based learning initiatives as action learning and communities of practice are discussed along with the presentations of how to apply learning transfer practically in e-learning pedagogy while

16 Devi Akella, "Unlearning the Fifth Discipline: Power, Politics and Control in Organizations", Response Books Pb; 2003
17 Henrich Greve, "Organizational Learning from Performance Feedback: A Behavioral Perspective on Innovation and Change", Illustrated Ed; Cambridge University Press Pb; 2003

training teams in effective organizations (Elwood et al, 2003)[18]. Presence is a book that takes an intimate look at the development of a new theory about change and learning; Its about looking at and acting on things differently to achieve by transferring the learning for changing organizations and the way it functions (Peter Senge et al, 2004)[19].

Leadership promotes OL and innovations (Gueldenberg, Konrath, 2004)[20]. OL is enhanced by the inter-relationships between customers by efficient utilization of resources (White et al, 2004)[21]. Recently, cross border effectiveness of the organizational model has become a fundamental management challenge amongst multinational operations. This interesting book by Vipin Gupta, broadly explains the nature and meaning of organizations in different regions of the world. It highlights how dynamic leaders can and do bring meaningful value to the world by creating and transforming organizations through OL. Knowledge Management, Innovation, Networking, Branding are the elements of strength with learning organizations (Vipin Gupta, 2004)[22].

Various characteristics of OL had been studied by Sohal indicate the presence of variables that affect OL (Sohal et al, 2004)[23]. Knowledge management is an integral part of OL (Campos et al, 2004)[24]. OL is constructed by global responsibility and support process efficiency (Antal et al, 2004)[25]. A sociocultural model is proposed which identifies communication as the key trigger of

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18 Elwood F. Holton, Timothy T. Baldwin, "Improving Learning Transfer in Organizations", Illustrated Ed; John Wiley and Sons Pb; 2003

[19] Peter Senge, C. Otto Scharmer, Joseph Jaworski, and Betty Sue Flowers; "Presence", The Society for Organizational Learning, Inc Pb; 2004.

[20] Gueldenberg et al. (2004), "Leadership Requirements in Learning Organisations and Methods to Impact", International Journal of Learning & Intellectual Capital, Vol.1(4), p441-459

[21] White et al. (2004), "Knowledge Construction in an Australian Software Development Enterprise: Developing the Knowledge Bases for Innovative Renewal", International Journal of Learning & Intellectual Capital, Vol.1(4), p405-415

[22] Vipin Gupta; "Transformative organizations - A Global Perspective", Illustrated Ed; Sage Pb; 2004

[23] Sohal et al. (2004), "In Search of Learning Organizations: Case Experiences from Hong Kong", International Journal of Technology Management, Vol.27(6/7), p656-673

[24] Campos, Eduardo, et al. (2004), "Innovation and Learning in the Knowledge-Based Economy: Challenges for the Firm", International Journal of Technology Management, Vol.27(6/7), p531-532

[25] Antal, Ariane, et al. (2004), "Beyond CSR: Organizational Learning for Global Responsibility", Journal of General Management, Vol.30(2), p77-98

sociocultural dynamics and organizational learning. Three learning practices are analyzed in detail; opening space for the creation of shared meaning, reconstituting power relationships and providing cultural tools to mediate organizational learning (Boreham et al, 2004)[26].

Creating knowledge and continuous learning are the key aspects of developing people and processes in a learning organization that holds a competitive advantage (Sharma et al, 2005)[27]. The relationship between Leadership and OL is revealed in this study that connects transformational leadership with the ability of the firm to combine and exchange information.

This paper says that transformational leadership enhances learning capability of the firm. Organizational setting and attitude affect OL along with transformational leadership making OL as competitive advantage (Farrell et al, 2005)[28]. The strategic practices and action patterns of a firm are based on learning and applying the knowledge internal and external to an organization while doing strategic planning. There are two different approaches such as adaptation and evaluation that support designing structured processes that incorporate organizational learning and knowledge application in strategic planning (Chengbo et al, 2005)[29].

Knowledge management, product and service quality standards enhance OL, which becomes competitive advantage of the firm (Chen et al, 2005)[30]. Knowledge and Information management are the constructs of OL (Lehman et al, 2005)[31]. Learning organizations are based on complexity theory, autopsies,

[26] Boreham, Morgan, et al. (2004), "A Sociocultural Analysis of Organizational Learning", Oxford Review of Education, Vol.30(3), p307-325

[27] Sharma, Gupta, et al. (2005), "A Framework for Building a Learning Organization in the 21st Century", International Journal of Innovation & Learning, Vol.2(3), p1-1

[28] Farrell, Flood, et al. (2005), "CEO Leadership, Top Team Trust and the Combination and Exchange of Information", Irish Journal of Management; jun2005, Vol.26(1), p22-40

[29] Chengbo, Johanson, et al. (2005), "Case-Based Approaches for Knowledge Application and Organizational Learning", International Journal of Learning & Intellectual Capital, Vol.2(2), p3-3

[30] Chen, Chong, et al. (2005), "Improve Customer Service Through Organizational Learning: A Case Study", International Journal of Innovation & Learning, Vol.2(1), p1-1

[31] Lehnmann, Lehner, et al. (2005), "Holistic Perspectives of Information Sharing and Knowledge Exchange: Selected Frameworks and Their Use", International Journal of Information Technology & Management, Vol.4(3), p1-1

and evolutionary epistemology; these kinds of organic organizations found to learn and evolve; they also have high level of ability of adaptations (Willium Hall, 2005)[32].

There are "best practices" in an organization that help organizations deploy developmental coaching on a large scale to drive leadership and employee effectiveness. Such organizations are also termed as Coaching Organizations. A Coaching Organization provides a guide for the strategic management of coaching initiatives, including executive coaching, internal coaching, coaching by managers and peer coaching, so as to maximize their impact and value (James et al, 2006)[33].

Knowledge management and OL are the triggers of OP (Ruiz et al, 2006)[34]. Personal learning effectiveness affects organizational learning (Grieves et al, 2006)[35]. The factors that affect OL and learning transfer are, lack of time to practice new learning and fragmented organizational support (Meyer et al, 2006)[36].

Specht's study reveals that 'cultural processes in an organization get affected by cultural processes that are constructed by social representations, groups' interactions, organizational learning and team working (Specht et al, 2006)[37]. Learning of organization is affected by implementation of information systems, owner centered culture and resource constraints to a larger extent. (Kelliher et al,

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[32] Willium hall, (2005), "Biological Nature of Knowledge in the Learning Organization", Learning Organization; Jun2005, Vol.12(2), p169-188

[33] James M. Hunt and Joseph R. Weintraub., "The Coaching Organization : A Strategy for Developing Leaders", Sage Pb; 2006

[34] Ruiz, Mercader, et al. (2006), "Information Technology and Learning: Their Relationship and Impact on Organizational Performance in Small Businesses", International Journal of Information Management, Vol.26(1), p16-29

[35] Grieves, McMillan, et al. (2006), "Barriers to Learning: Conflicts that Occur between and within Organizational Systems", International Journal of Learning & Intellectual Capital, Vol.3(1), p2-2

[36] Meyer, Connell, et al. (2006), "Leadership Development: Applying New Learning in an Organizational Context", British Journal of Leadership in Public Service, Vol.2(2), p21-33

[37] Specht, Denis, et al. (2006), "Dedicating Management to Cultural Processes: Toward a Human Risk Management System", Journal of Risk Research, Vol.9(5), p525-542

2006)[38]. A study by Hyvonen reveals that innovation skills, good customer relationships and commitment affect performance impact organizational learning (Hyvnen et al, 2006)[39].

Juan analyses the impacts of OL by Organizational Learning (OL), by knowledge creation, and Information Technological Distinctive Competencies (TDCs) and entrepreneurial orientation (EO) (Juan et al, 2006)[40]. An individual's trait such as 'curiosity' in conjunction with mindfulness and differences in learning styles, affect organizational learning process. (Leonard et al, 2007)[41]. OL gets enhanced by acquiring, disseminating and utilizing market knowledge of customers and competitors (Siu Loon Hoe, 2006)[42].

A solid, research-based conceptual framework that demystifies organizational learning bridges the gap between theory and practice. Using an integrative approach, the authors provide practitioners and researchers with tools for understanding organizational learning under real-world conditions. This book established OL theory is different from practice (Raanan et al, 2007)[43].

2.2   Organizational Intelligence (OI)

Past researchers had established some knowledge base to derive relationship between organizational knowledge and competitive advantage of a firm. Attempts towards measuring organizational intelligence are found to be very limited. A comprehensive study encompassing varied perspectives of managing

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[38] Kelliher, Henderson, et al. (2006), "A Learning Framework for the Small Business Environment", Journal of European Industrial Training, Vol.30(7), p512-528

[39] Hyvonen, Touminen, et al. (2006), "Entrepreneurial Innovations, Market-Driven Intangibles and Learning Orientation: Critical Indicators for Performance Advantages in SMEs", International Journal of Management & Decision Making, Vol.7(6), p643-660

[40] Juan, Antanio, et al. (2006), "Determinants of Organizational Learning in the Generation of Technological Distinctive Competencies", International Journal of Technology Management, Vol.35(1/4), p284-307

[41] Leonard, Michael, et al. (2006), "Curiosity, Mindfulness and Learning Style in the Acquisition of Knowledge by Individuals / Organizations", International Journal of Learning & Intellectual Capital, Vol.4(3), p1-1

[42] Siu Loon Hoe, (2008), "Benefiting from Customer and Competitor Knowledge: A Market-Based Approach to Organizational Learning.", Learning Organization, Vol.15(3), p240-250

[43] Raanan Lipshitz, Victor Friedman, Micha Popper, "Demystifying Organizational Learning", sage Pb, 2007

an organization and multitude of factors affecting the level of intelligence of both tangible and intangible aspects comprising of an organization is not available for normative and prescriptive guidelines to the contemporary academia as well as corporate executives. It had been decided to explore various facets of organizational intelligence (OI) and organizational performance (OP) and establish linkages between them in this research work. OI aims at creating a learning organization, a market driven organization, and an innovative organization. 'Whether, the basic aims and tenets of OI lead to improving OP or not' has been explored. Therefore, suitable models, constructs, propositions and instruments are required to measure OI and OP and relate them to real life organizational settings for validation. Literature reveals that, researchers have defined OI differently but not established the relationship between OI and the overall performance of organizations.

Presence of intelligence in organizations in terms of the knowledge and policies of industries and Government across the globe and OI is defined as processed information for strategic planning process (Etzioni et al, 1968)[44]. A review of the book "Organizational Intelligence: Knowledge & Policy in Government & Industry", indicates, utilization of organizational intelligence for decision-making where in OI is defined as the ability to process and utilize information and knowledge for strategic planning of Government and Industrial Policies (Bill Goode, 1968)[45].

The relationship between Knowledge Management and OI of public and governmental organizations and Effective Policy Decisions triggers high quality organizational intelligence in private organizations. Comparison of review of the two books, "Organizational Intelligence: Knowledge and Policy in Government and Industry," by Harold L. Wilensky; and "Hidden Hierarchies: The Professions and Government," by Corinne Lathrop Gilb, reveals that there are obvious different orientations towards organizational intelligence. The former book indicates the relationship between an effective knowledge management and its

[44] Etzioni, Amitai, (1968), "Organizational Intelligence: Knowledge and Policy in Government and Industry", American Sociological Review, Vol.33(1), p131-132
[45] Goode, Bill, (1968), "Crafty Work", Monthly Labor Review, Vol.91(3), p122-123

impact on policy decisions, wherein the later one focuses on how professionalism and hierarchical decisions get affected by policy decisions, which in turn trigger high quality intelligence in organizations. (Lakoff et al, 1968)[46].

Organizational intelligence technology is usage of intelligent information systems (King et al, 1973)[47]. OI is a resource of high performing organizations (March, 1979)[48]. Intelligence is concerned with found in the product innovation (Cooper 1979)[49]. OI is enhanced by the ability of the organization to scan the business environment effectively (Hambrick, 1981)[50]. (Daft et al, 1984)[51] focuses on organizations themselves as interpretation systems consisting of collecting data, giving meaning to data and learning. Resource management affects performance variations of organizations (Wernerfelt, 1984)[52], (Barney, 1986)[53]. OI is closely related to with market knowledge and market proficiency (Cooper and Kleinschimidt, 1987)[54].

Incremental experiential learning can be a form of OI, less demanding cognitively yet capable of considerable power. It says learning mechanism can improve organizational performance. It also reveals some of the possible heuristics to overcome learning liabilities in organizations. It also suggests effectiveness of incremental learning can be improved by slowing the rate of

[46] Lakoff, Sanford, (1968), "Organizational Intelligence: Knowledge and Policy in Government and Industry / Hidden Hierarchies: The Professions and Government", Administrative Science Quarterly, Vol.13(1), p171-177

[47] King, William R, (1973), "The Intelligent MIS-a Management Helper", Business Horizons, Vol.16(5), p5-13

[48] March, Olsen, (1986), "Garbage Can Models of decision Making in Organization: Ambiguity and Command", MA. Pitman, p11-35

[49] Cooper. R.G (1979), "The Dimensions of Industrial New product Success and Failure", Journal of Marketing, Summer, p93-103

[50] Hambrick, C. Donald (1981), "Environment, Strategy, and Power within Top Management Teams", Administrative Science Quarterly, Vol.26, p253-276

[51] Daft. R.L, & Weick. K.E.(1984), "Toward a Model of Organizations as Interpretation systems", Academy of Management Review, Vol.9, p284-295.

[52] Wernerfelt, (1984), "A Resource Based View of the Firm", Strategic Management Journal, Vol.5, p171-19

[53] Barney, (1991), "Firm Resources and Sustained Competitive Advantage", Journal of Management, Vol.17, p99-120

[54] Cooper .R.G and E.J. Kleinschmidt (1987), "New Products: What separates Winners from Losers?", Journal of Product Innovation Management, Vol.4, p169-184

learning and adapting to behavioral changes that happen in organizations (Lounamaa, 1987)[55].

OI enables an organization to meet contingencies of survival under such relatively novel unexpected crises (Curtis et al, 1989)[56]. Market orientation drives OI (Kohli et al, 1990)[57]. OI can lead to meaningful HR management policies and practices in corporate sector (Kraut et al, 1990)[58]. Huber (1991)[59] summarizes the literature about knowledge acquisition, information distribution, information interpretation and organizational memory and links these constructs to organizational learning. There is a need for competitiveness, which arises from the counterintelligence for competitiveness leading to organizational intelligence (Sulc et al, 1992)[60].

Cognitive learning and artificial intelligence construct OI (Blanning et al, 1992)[61]. Well-managed knowledge management systems can enhance organizational effectiveness and intelligence (Chen et al, 1992)[62].

Knowledge base of an organization is a key resource (Hedlund, 1994)[63]. The "capabilities" approach in the strategic marketing literature proposes a theoretical basis for analyzing the relationship between knowledge management

[55] Lounamaa et al, (1987), "Adaptive Coordination of a Learning Team", Management Science, Vol.33(1), p107-123

[56] Curtis et al, (1989), "Cutbacks, Management, and Human Relations: Meanings for Organizational Theory and Research", Human Relations, Vol.42(8), p671

[57] Kohli. Ajay. K and Bernard J. Jaworski (1990), "Market Orientation: The Construct, Research propositions and Managerial Implications", Journal of Marketing, Vol.54 (April), p1-18

[58] Kraut, Allen, (1990), "Some Lessons On Organizational Research Concerning Work and Family Issues", Human Resource Planning, Vol.13(2), p109-119

[59] Huber. G.P (1991), "Organizational Learning: The Contributing Processes and the Literatures", Organization Science, Vol.2, p88-115

[60] Sulc, Lawrence, (1992), "Organizational Intelligence and Counterintelligence.", Competitive Intelligence Review, Vol.3(1), p23-25

[61] Blanning et al, (1992), "Intelligent Models of Human Organizations: the State of the Art", Journal of Organizational Computing & Electronic Commerce, Vol.2(2), p123

[62] Chen et al, (1992), "Developing Intelligent Organizations: A Context-Based Approach to Individual and Organizational Effectiveness", Journal of Organizational Computing & Electronic Commerce, Vol.2(2), p181-203

[63] Hedlund, (1994), "A Model of Knowledge Management and N-form Corporation", Strategic Management Journal, Vol.15, p73-90

and product innovation (Day, 1994)[64]. The Research article (Day et al, 1994)[65] sorts capabilities into three categories: the inside out, the outside in, and spanning capabilities. It says that market driven organizations have a distinctive capability on outside-in processes consisting of market sensing, customer linking, channel bonding and technology monitoring activities and spanning processes including product innovation.

Knowledge creation is a resourceful activity in performing organizations (Nonaka, 1995)[66]. Highly Intelligent Organizations outperform. The core concept of OI uses theories of organizational learning (Choo 1995)[67].

Firms possessing unique and inimitable resources are believed to survive or have better performance in the competitive market place (Connor, 1996)[68]. OI is a resource of high performing organizations (McMaster 1996)[69]. The organizational intelligence literature reveals three basic features of an intelligent organization; An intelligent organization is considered as a learning organization, a market-driven organization, and an innovative organization (Glynn 1996)[70]. Individual intelligence forms the platforms for providing insight into how organizations can acquire information, disseminate information, utilize information, respond to information to facilitate and create competitive advantages (Glynn, 1996)[71].

The seven essentials of organizational intelligence include widespread truth and rights; freedom of enterprise, liberated teams, equality and diversity, voluntary learning networks, democratic self-rule, and limited corporate government -

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[64] Day. G (1994), "The Capabilities of Market Driven Organizations", Journal of Marketing, Vol.58, p37-52.

[65] Day. G & Nedungadi. P. (1994), "Managerial Representations of Competitive Advantage", Journal of Marketing Vol.58, p31-44

[66] Nonaka, Takeuchi, (1995), "The Knowledge Creating Company", Oxford University Press, NY

[67] Choo, Wei Chun (1998), "Information Management for the Intelligent Organization: The Art of Scanning the Environment". Information Today Inc, Medford NJ.

[68] Conner, Prahalad, (1996), "A Resource Based Theory of the Firm: Knowledge Versus Opportunism", Organization Science, Vol.5, p477-501

[69] McMaster. M.D. (1996), "The Intelligence Advantage: Organizing for Complexity, Newton, Ma: Butterworth – Heinnemann."

[70] Glynn, (1996), "Innovative Genius: A Framework for Relating Individual and Organizational Intelligence to Innovation", Academy of Management Review, Vol.21, p81-1111

[71] Glynn, (1996), "Innovative Genius: A Framework for Relating Individual and Organizational Intelligence to Innovation", Academy of Management Review, Vol.21, p81-1111

form the basic drivers of OI (Thomas Gerald, 1996)[72]. OI is developed by innovations in the organizations; individual intelligence and organizational intelligence are functionally similar; OI is a social outcome due to the factors like mechanisms of aggregation, cross-level transference, and distribution in operations that affect organizational innovation process: initiation and implementation (Glynn et al, 1996)[73]. Information storing and management can enhance intelligence in organizations for decision making (Blackman et al, 1996)[74].

OI is measured through market information processing skills of an organization (Moorman, 1995)[75] and (Ottum et al, 1997)[76]. Organizational learning takes place only when the organization effectively acquires, organizes, stores, and, most importantly, transforms information into knowledge products that are useful to its purposes (Robert Williams, 1997)[77]. Intelligent organizations are in a continuous cycle of learning and adaptation; artificial intelligence constructs intelligent organizations (Krovi et al, 1997)[78]. There are parameters such as process efficiency and systemic efficacy that determine the learning abilities of an organization which is regarded as the intelligence of organizations; knowledge structures in the organization can improve process efficiency; In intelligent organizations have a standard architecture to scale production efficiency, utility, and effectiveness (Dan zhu et al, 1997)[79].

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[72] Thomas, Gerald, (1996), "Review of the book - The End of Bureaucracy and the Rise of the Intelligent Organization", Industrial & Labor Relations Review, Vol.49(4), p765-766

[73] Glynn, Mary Ann (1996), "Innovative Genius: A Framework for relating Individual and Organizational Intelligences to Innovation", Academy of Management Review,Vol.21(4), p1081-1111.

[74] Blackman et al, (1996), "Using Administrative Data for Intelligent Local Governance", Journal of Applied Management Studies, Vol.5(2), p179-199

[75] Moorman. C. (1995), "Organizational Market Information processes: Culture Antecedents and New Product Outcomes", Journal of Marketing Research, Vol.32, p318-335

[76] Ottum. D. Brain and Willium. L. Moore., (1997), "The Role of Market Information in New Product Success / Failure", Journal of Product Innovation Management, Vol.14(4), p258-273

[77] Robert, Williams, (1997), "Review of the book `Information Management for the Intelligent Organization: The Art of Scanning the Environment'", Journal of Academic Librarianship, Vol.23(2), p146-147

[78] Krovi et al, (1997), "Review of the book, "Organizational Intelligence: AI in Organizational Design, Modeling, and Control", Interfaces, Vol.27(3), p114-115

[79] Dan Zhu et al, (1997), "When Processes Learn: Steps Toward Crafting an Intelligent Organization", Information Systems Research, Vol.8(3), p302-317

According to Day (Day et al, 1997)[80], a modern school of thought emphasizes, the essence of acquisition, dissemination, and utilization of information in the organization lead to OI. These activities are considered critically important because of their roles in stimulating learning. OI is directly related to market knowledge competence (Li and Calantone, 1998)[81]. OI is a key driver of High performance in organizations (Morgan 1998)[82]. Organizations fail to learn from their experience in systems development because of limits of organizational intelligence, disincentives for learning, organizational designs and educational barriers; poor systems efficiency leads to poor performances (Lyytinen et al, 1999)[83].

Learning quality and OL is an outcome of OI (Clegg et al, 1999)[84]. Cultural differences affect information system utilization and OI (Leidner et al, 1999)[85]. Managing information and creating knowledge for strategic planning create intelligent organizations (Malinowski et al, 1999)[86]. Competitive Intelligence and market intelligence add to OI of an organization (Calantone et al, 1988)[87], (Song and Parry, 1997)[88] and (Harmsen, et al, 2000)[89].

Organizations that have effective knowledge management systems providing knowledge based competitive advantages over the competitors are considered to

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[80] Day. G & Nedungadi. P. (1994), "Managerial Representations of Competitive Advantage", Journal of Marketing, Vol.58, p31-44

[81] Li, Tiger & Roger. J. Calantone (1998), "The Impact of Market Knowledge Competence on New product Advantage: Conceptualization and Empirical Examination", Journal of Marketing, p13-29

[82] Morgan. G (1998), "Images of Organization", The Executive Edition, CA: Sage Publications.

[83] Lyytinen et al, (1999), "Learning Failure in Information Systems Development", Information Systems Journal, Vol.9(2), p85-101

[84] Clegg et al, (1999), "Globalizing the Intelligent Organization", Management Learning, Vol.30(3), p260-282

[85] Leidner et al, (1999), "Mexican and Swedish Managers' Perceptions of the Impact of EIS on Organizational Intelligence, Decision Making, and Structure", Decision Sciences; Summer99, Vol.30(3), p633-658

[86] Malinowski et al, (1999), "Tools of the Serials Trade", Serials Review, Vol.25(3), p113-120

[87] Calantone, J. Roger and C. Antony Di Benedetto (1998), "An Integrative Model of the New Product Development Process: An Empirical Validation", Journal of Product Innovation Management, Vol.5, p201-215

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be intelligent organizations (Liebowitz, 2000)[90]. OI is managed with varieties of strategic processes, which are offensive and defensive (Cronin et al, 2000)[91]. Organizations balancing power, knowledge and learning, gain a competitive advantage; intelligent organizations promote innovation and exploit new ideas to their advantage through strategic planning processes (Vickers et al, 2000)[92]. These concepts explain the relationship between organizational knowledge and competitive advantage (Thomas, et al., 2001)[93]. OI gets affected by environmental indicators of Business (Howell et al, 2001)[94]. Organizational cybernetics framed with virtuous, self-controlled and self-transforming qualities lead to specific organizational identity and OI (Schwaninger et al, 2001)[95]. External information awareness, effective decision architecture, internal knowledge dissemination, organizational focus, and business networks in banking sector impact OI drastically (Altinkemer et al, 2001)[96]. Inspiring and transforming leadership can enhance organizational intelligence (Hagenow et al, 2001)[97].

Best practices of strategic process planning and decision-making enhances OI (Matheson et al, 2001)[98]. The value of goods and services would be based primarily on the development of knowledge-based intangibles including technical know-how, product design, marketing presentations, understanding

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[96] Altinkemer et al, (2001), "Bundling E-Banking Services", Communications of the ACM, Vol.44(6), p45-47

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[98] Matheson et al, (2001), "Smart Organizations Perform Better", Research Technology Management, Vol.44(4), p49-55

customers, personal creativity, and innovation in an intelligent organization (Jones et al, 2001)[99].

Technology can affect knowledge management and information usage and in turn the intelligence of organizations (Schoech et al, 2002)[100]. Motivation, intelligence, thinking and knowledge creation, Creating and managing intellectual capital along with systems and processes result in the creation of intelligent organizations (Richards et al, 2002)[101]. OI is driven by 1) being adaptable to changes, 2) being rapid in action and reaction, 3) being flexible comfortable, 4) being sensitive 5) being open-minded, 6) being able to use imagination, 7) being able to renew, 8) effective management and usage of human resources, 9) effective usage of technology, 10) effective usage of knowledge, and 10) organizational learning ability (Erçetin et al, 2002)[102]. The empirically derived factors such as awareness, communication, performance assessment, intellectual cultivation, environmental adaptability, social learning, intellectual capital management, and organization grafting; these factors gauge OL that impacts OI (Templeton et al, 2002)[103].

Organizations can be reoriented towards organizational structure based on organizational mind with collective intelligence (Liang et al, 2002)[104]. Risk taking ability in organizations, ability of exploring and exploiting opportunity, ability of learning, ability for making a decision and executing it successfully, having knowledge consciousness and managing continuity, being conscious of changes in organizational actions are the parameters that affect OI (Miner et al, 2002)[105].

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[99] Jones, Sandra, (2002), "Employee Rights, Employee Responsibilities and Knowledge Sharing in Intelligent Organization", Employee Responsibilities & Rights Journal, Vol.14(2/3), p69-78
[100] Schoech et al, (2002), "From Data to Intelligence: Introducing the Intelligent Organization", Administration in Social Work, Vol.26(1), p1-21
[101] Richards et al, (2002), "Rethink or Else....! Creating Intelligent Organizations", Journal for Quality & Participation, Vol.25(4), p34-37
[102] Erçetin et al, (2002), "Action Research... Organizational Intelligence... Curriculum Development..", Educational Research Quarterly, Vol.26(1), p41-50
[103] Templeton et al, (2002), "Development of a Measure for the Organizational Learning Construct", Journal of Management Information Systems, Vol.19(2), p175-218
[104] Liang et al, (2002), "The Inherent Structure and Dynamics of Intelligent Human Organizations", Human Systems Management, Vol.21(1), p9-20
[105] Miner et al, (2002), "The Pursuit of Organizational Intelligence", Administrative Science Quarterly, Vol.47(1), p174-178

Leadership drives OI (Kerfoot et al, 2003)[106]. OI, firm specificity of technology, and causal ambiguity are identified as three drivers of technological learning and OP (Lin et al, 2003)[107].

OI is defined as "the capacity of an organization to mobilize all of its brain power, and focus that brain power on achieving the mission"; strategic vision, appetite for change, alignment and congruence, performance pressure, knowledge deployment, heart, and shared fate are the components of OI (sessa et al, 2004)[108]. Learning behavior of an organization that implemented balanced scorecard method of performance management in different departments enhances OI (Askim et al, 2004)[109]. Competition between human beings enhances the evolution of intelligence in organizations (Lawton et al, 2004)[110]. Knowledge management processes, collaborative and competitive environment enhances the learning and adaptability of organizations leading to organizational intelligence in humanistic organizations (Liang, 2004)[111].

The relationship between OI and systemic cultural intelligence indicates the evolution of culture triggering intelligence of organizations, which impacts organizational development (Stalinski et al, 2004)[112]. Rapid action and reaction; quickly adapting to changes; flexible in function; sensitiveness and being predictable; open-mindedness; the use of imagination; being innovative are the prime factors that are retained by intelligent organizations (Erçetin et al, 2004)[113].

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[107] Lin, Bou-Wen, (2003), "Technology Transfer as Technological Learning: A Source of Competitive Advantage for Firms with Limited R&D Resources", R&D Management, Vol.33(3), p327-341

[108] Sessa et al, (2004), "Review of the Book - The Power of Minds at Work: Organizational Intelligence in Action - by Karl Albrecht", Personnel Psychology, Vol.57(4), p1071-1073

[109] Askim et al, (2004), "Performance Management and Organizational Intelligence: Adapting the Balance Scorecard in Larvik Municipality", International Public Management Journal, Vol.7(3), p415-438

[110] Lawton et al, (2004), "Integral Science and Intelligence in Organizations", World Futures: The Journal of General Evolution, Vol.60(4), p303-309

[111] Liang, (2004), "Intelligence Strategy: The Integrated 3C-OK Framework of Intelligent Human Organizations", Human Systems Management, Vol.23(4), p203-211

[112] Stalinski, Sherryl, (2004), "Organizational Intelligence: A Systems Perspective", Organization Development Journal, Vol.22(2), p55-67

[113] Erçetin et al, (2004), "The Abilities Related to The Organizational Intelligence and Their Action Dimensions at Schools", Research for Educational Reform, Vol.9(3), p37-52

Ability of the organization to gather information, to innovate, to generate knowledge, and to act effectively basing on the knowledge it has generated are different components that construct OI. (Staškevičiūtė et al, 2006)[114]. Inter-organizational networks, hierarchy, and organizational interaction construct OI (Seidl et al, 2007)[115]. Spirituality is found in the organization that may exist in terms of the concerns and care of employees in workplace and at structural level add to OI (Moss et al, 2007)[116]. There is an absence of dichotomy in terms of organizational intelligence and individual intelligence; a structuration view of OI integrates the fragmented studies on the epistemology of intelligence, which are measured with cognitive, behavioral and social/emotional abilities of learning (Akgün et al, 2007)[117]. The relationship between OI and information management is positive (Cruz et al, 2008)[118].

PART II

2.3   Organizational Performance (OP)

Research studies show various parameters that affect OP positively. Pressure on quality improves OP (Hall et al, 1970)[119]. Leadership affects OP positively (Pfeffer, Jeffrey1, 1977)[120]. Productivity and efficiency dominate quality and service, which are the primary metrics of organizational performance (Hackman et al, 1978)[121]. Good organizational performance requires both good decision

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[114] Staškevičiūtė et al, (2006), "Applying the Principles of Organizational Intelligence in University Strategies", Engineering Economics, Vol.48(3), p63-72

[115] Seidl, David, (2007), "The Dark Side of Knowledge", Emergence: Complexity & Organization, Vol.9(3), p16-29

[116] Moss et al, (2007), "Towards a Spiritually Intelligent Work Place", Illness, Crisis & Loss, Vol.15(3), p261-271

[117] Akgün et al, (2007), "Organizational Intelligence: A Structuration View", Journal of Organizational Change Management, Vol.20(3), p272-289

[118] Cruz et al, (2008), "Intelligence and Information Management: Integration in Organizational Contexts", ACIMED, Vol.17(5), p51-60

[119] Hall et al, (1970), "Job Characteristics and Pressures and the Organizational Integration of Professionals", Administrative Science Quarterly, Vol.15(3), p271-281

[120] Pfeffer, Jeffrey, (1977), "The Ambiguity of Leadership", Academy of Management Review, Vol.2(1), p104-112

[121] Hackman et al, (1978), "The Design of Work in the 1980s", Organizational Dynamics, Vol.7(1), p3-17

making processes and efficient operations by the use of adaptive processes in a competitive environment (Neave et al, 1980)[122].

Organizational culture affects OP (Wilkins et al, 1983)[123]. Job retention and expansion, healthy labor relations, individual and collective motivation, and wealth creation affect OP (Woodworth et al, 1986)[124]. Service production efficiency and marketing opportunities are to be balanced to obtain organizational performance (Tansik et al, 1990)[125]. Service quality and customer satisfaction, leadership and management practices influence organizational effectiveness and in turn their performance.

Leadership and service quality initiatives affect organizational performance as a whole (Tornow, Carol, 1991)[126]. Service quality and customer satisfaction, Leadership and management practices affect OP drastically (Tornow, walter, 1991)[127]. Customer satisfaction, employee satisfaction, and employee service quality show a positive direct relationship with OP (Madu et al, 1995)[128]. Training and staffing selectivity systems (HRM systems) affect firm performances positively (Delany et al, 1996)[129]. Service quality and customer satisfaction are the parameters that measure OP (Wisniewski et al, 1996)[130].

Total Quality Management (TQM) and Socio-technical Systems theory (STS) as 2 distinctive methods to achieve organizational stability and flexibility; The model

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[122] Neave et al, (1980), "A Comparison of Optimal and Adaptive Decision Mechanisms in an Organizational Setting", Management Science, Vol.26(8), p810-822

[123] Wilkins et al, (1983), "Efficient Cultures: Exploring the Relationship between Culture and Organizational Performance", Administrative Science Quarterly, Vol.28(3), p468-481

[124] Woodworth et al, (1986), "Managing From Below", Journal of Management, Vol.12(3), p391

[125] Tansik et al, (1990), "Balance in Service Systems Design", Journal of Business Research, Vol.20(1), p55-61

[126] Tornow et al, (1991), "Management Effectiveness, Service Quality, and Organizational Performance in Banks", Human Resource Planning, Vol.14(2), p129-139

[127] Tornow et al, (1991), "Service Quality and Management Practices: A Look at Employee Attitudes, Customer Satisfaction, and Bottom-Line Consequences", Human Resource Planning, Vol.14(2), p105-115

[128] Madu et al, (1995), "A Comparative Analysis of Quality Practice in Manufacturing Firms in the U.S. and Taiwan", Decision Sciences, Vol.26(5), p621-635

[129] Delaney et al, (1996), "The Impact of Human Resource Management Practices on Perceptions of Organizational Performance", Academy of Management Journal, Vol.39(4), p949-969

[130] Wisniewski et al, (1996), "Measuring service quality in the public sector: the potential for SERVQUAL", Total Quality Management, Vol.7(4), p357-366

designed fosters efficiency, stability, innovation flexibility, psychological ownership, quality of work-life, continuous and discontinuous learning, and high organizational performance and customer satisfaction (Manz et al, 1999)[131].

Resource management processes are part of strategy formulation and deployment in high performing organizations (Tyson et al, 1997)[132]. Competitive edge increases due to improved productivity, product quality, organizational flexibility, and responsiveness to changes in the external environment increasing OP (Birecree et al, 1997)[133]. OP is improved by reengineering to efficient processes and systems to utilize resources efficiently leading to profitability (Cox et al, 1998)[134]. Process implementation initiatives affect OP (Noble et al, 1999)[135]. Market-driven business units developed higher levels of six vital marketing capabilities - market research, pricing, product development, channels, promotion, and market management against OP (Vorhies et al, 1999)[136].

Total Quality Management (TQM) system improves quality of services (McCarthy et al, 1999)[137]. Organizational learning and strategy efficiencies and management systems affect OP (Schiller et al, 2001)[138]. Total Quality Management (TQM) changes OP by improving organizational efficiency and effectiveness (Nwabueze et al, 2001)[139]. Information Technology initiatives affect

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[131] Manz et al, (1997), "Attaining Flexible Stability by Integrating Total Quality Management and Socio-technical Systems Theory", Organization Science, Vol.8(1), p59-70

[132] Tyson et al, (1997), "Human Resource Strategy: A Process for Managing the Contribution of HRM to Organizational Performance", International Journal of Human Resource Management, Vol.8(3), p277-290

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[137] McCarthy et al, (1999), "A Measure of Staff Perceptions of Quality-Oriented Organizational Performance", Journal of Quality Management, Vol.4(2), p185-207

[138] Schiller et al, (2001), "The Effects of Chinese Learning on the Efficiency of Organizational Strategies: An Analysis", International Journal of Management, Vol.18(3), p369-377

[139] Nwabueze et al, (2001), "The Implementation of TQM for the NHS Manager", Total Quality Management, Vol.12(5), p657-675

OP (Shao et al, 2001)[140]. Innovation in products, services and processes affect OP (Damanpour et al, 2001)[141].

Quality context (QC), quality outcomes (QO), market orientation (MO) and Market/product development outcomes (MPD) are independently related to organizational financial performance (Raju et al, 2002)[142]. Pay structures, resource distribution efficiency affect financial performance (Brown et al, 2003)[143]. ERP implementation improves organizational performance (Bradford et al, 2003)[144].

Knowledge management processes and organizational culture affect OP (Brockman et al, 2003)[145]. High performance work systems, information quality, and performance quality, employee knowledge, work design, and total quality management systems affect OP (Preuss et al, 2003)[146]. HRM practices such as training, job design, compensation and incentives directly affect the operational performance parameters, viz., employee retention, employee productivity, product quality, speed of delivery and operating cost (Paul et al, 2003)[147].

Stakeholder relationships affect OP largely (Carmona et al, 2003)[148]. Quality management and process improvement affect OP (Yeung et al, 2004)[149]. Increased

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[140] Shao et al, (2001), "Measuring the Value of Information Technology in Technical Efficiency with Stochastic Production", Information & Software Technology, Vol.43(7), p448-457

[141] Damanpour et al, (2001), "The Dynamics of the Adoption of product and Process Innovations in organizations", Journal of Management Studies, Vol.38(1), p45-65

[142] Raju et al, (2002)," The Impact of Service Quality and Marketing on Financial Performance in the Hospital Industry: An Empirical Examination", Journal of Retailing & Consumer Services, Vol.9(6), p335-348

[143] Brown et al, (2003), "Compensation Policy and Organizational Performance", Academy of Management Journal, Vol.46(6), p752-762

[144] Bradford et al, (2003), "Examining the Role of Innovation Diffusion Factors on the Implementation Success of Enterprise Resource Planning Systems", International Journal of Accounting Information Systems, Vol.4(3), p205-226

[145] Brockman et al, (2003), "The Role of Existing Knowledge in New Product Innovativeness and Performance", Decision Sciences, Vol.34(2), p385-420

[146] Preuss et al, (2003), "High Performance Work Systems and Organizational Outcomes: The Mediating Role of Information Quality", Industrial & Labor Relations Review, Vol.56(4), p590-605

[147] Paul et al, (2003), "Impact of People Management Practices on Organizational Performance: Analysis of a Causal Model", International Journal of Human Resource Management, Vol.14(7), p1246-1266

[148] Carmona et al, (2003), "Measures Vs Actions: The Balanced Scorecard in Swedish Law Enforcement", International Journal of Operations & Production Management, Vol.23(11), p1475-1496

stakeholder participation in value creation and organizational governance can benefit both society and corporations through performing organizations (Harrison et al, 2004)[150]. High Performance Work Systems lead to financial performance through administrative efficiency and sustainable performance through flexibility arising from the coordination and exploitation of knowledge resources (Evans et al, 2005)[151]. Knowledge management (KM) processes affect organizational performance. (Sabherwal et al, 2005)[152].

Performance Measurement Systems strategic initiatives enhance OP (Kit Fai et al, 2005)[153]. Process management frameworks affect Organizational Performance and organizational effectiveness (Baker et al, 2005)[154]. Sustained organizational performance depends on top management teams effectively exploring and exploiting. Leadership with abilities to articulate a paradoxical frame, to differentiate between the strategy, to innovate architecture for the existing and new products and those for innovation and to integrate between those strategies and architectures affect OP (Smith et al, 2005)[155].

Healthy work environment improves OP (Anderzén et al, 2005)[156]. Downsizing affects employee's productivity, profitability and efficiency, which in turn measure OP (Gyu-Chang et al, 2006)[157]. Enterprise systems implementation

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[149] Yeung et al, (2004), "From Customer Orientation to Customer Satisfaction: The Gap Between Theory and Practice", IEEE Transactions on Engineering Management, Vol.51(1), p85-97

[150] Harrison et al, (2004), "Special Topic: Democracy in and around organizations", Academy of Management Executive, Vol.18(3), p49-53

[151] Evans et al, (2005), "High-Performance Work Systems and Organizational Performance: The Mediating Role of Internal Social Structure", Journal of Management, Vol.31(5), p758-775

[152] Sabherwal et al, (2005), "Knowledge Management Using Information Technology: Determinants of Short-Term Impact on Firm Value", Decision Science, Vol.36(4), p531-567

[153] Kit Fai et al, (2005), "A Performance Measurement Paradigm for Integrating Strategy Formulation: A Review of Systems and Frameworks", International Journal of Management Reviews, Vol.7(1), p49-71

[154] Baker et al, (2005), "Enhancing Organizational Performance: Facilitating the Critical Transition to a Process View of Management", SAM Advanced Management Journal, Vol.70(4), p43-60

[155] Smith et al, (2005), "Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams", Organization Science, Vol.16(5), p522-536

[156] Anderzén et al, (2005), "The Impact of a Prospective Survey-Based Workplace Intervention Program on Employee Health, Biologic Stress Markers, and Organizational Productivity", Journal of Occupational & Environmental Medicine, Vol.47(7), p671-682

[157] Gyu-Chang et al, (2006), "The Effect of Downsizing on the Financial Performance and Employee Productivity of Korean Firms", International Journal of Manpower, Vol.27(3), p230-250

impacts OP (Arnold et al, 2006)[158]. OP affects organizational culture (Chehade et al, 2006)[159]. Information systems implementation affects OP positively (Mehta et al, 2006)[160]. Effective Business process management impacts OP (Richard et al, 2006)[161]. Strategic Decision Making Process implementations affect OP positively (Snyman et al, 2006)[162]. Total Quality Management is an integral part of OP (Chinho et al, 2006)[163]. Service orientation and organizational culture affect OP (Lytle et al, 2006)[164].

Return on total assets and profitability count OP (Szymanski et al, 2007)[165]. (1) Financial, (2) customer satisfaction, (3) process innovation, (4) production process and (5) organizational learning and growth are the parameters that measure OP (Azadeh ET AL, 2007)[166]. Business Process Reengineering and ERP implementation improve OP (Velcu et al, 2007)[167].

Leadership impacts OP positively (Ashkenas et al, 2007)[168]. Product and service quality, leadership, and effective KM implementations impact OP largely (Anantatmula et al, 2007)[169]. Workflow systems, individual performance and

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[158] Arnold et al, (2006), "Behavioral Research Opportunities: Understanding the Impact of Enterprise Systems", International Journal of Accounting Information Systems, Vol.7(1), p7-17

[159] Chehade et al, (2006), "Culture Change for the Analytical Mind", Strategic Finance, Vol.87(12), p11-15

[160] Mehta et al, (2006), "Leveraging Information Systems Tools, Security and Online Usage in Banking and Insurance Sector", Journal of Services Research, Vol.5(2), p193-204

[161] Richard et al, (2006), "Business Process Management as Competitive Advantage: A Review and Empirical Study", Total Quality Management & Business Excellence, Vol.17(1), p21-40

[162] Snyman et al, (2006), "Strategic Decision Processes and Firm Performance Among Truckload Motor Carriers", Journal of American Academy of Business, Vol.8(1), p265-270

[163] Chinho et al, (2006), "Exploring TQM's Impact on the Causal Linkage Between Manufacturing Objective and Organizational Performance", Total Quality Management & Business Excellence, Vol.17(4), p465-484

[164] Lytle et al, (2006), "Service Orientation and Performance: An Organizational Perspective", Journal of Services Marketing, Vol.20(2), p136-147

[165] Szymanski et al, (2007), "A Comparative Analysis of Firm Performance in Post-socialist Economies: Evidence from the Polish Food Processing Industry", Post-Communist Economies, Vol.19(4), p433-448

[166] Azadeh et al, (2007), "An Integrated Framework for Continuous Assessment and Improvement of Manufacturing Systems", Applied Mathematics & Computation, Vol.186(2), p1216-1233

[167] Velcu et al, (2007), "Exploring the Effects of ERP systems on Organizational Performance: Evidence from Finnish Companies", Industrial Management & Data Systems, Vol.107(9), p1316-1334

[168] Ashkenas et al, (2007), "The Leader as Capacity Builder", Leader to Leader, Vol.43, p44-49

[169] Anantatmula et al, (2007), "Linking KM Effectiveness Attributes to Organizational Performance", VINE: The Journal of Information & Knowledge Management Systems, Vol.37(2), p133-149

attitudes towards the systems construct performances in organizations (Stone et al, 2007)[170]. Organizational change, cycle time improvement, efficient resource utilization improve OP (Lee et al, 2008)[171]. Implementation of performance measurement systems improves OP (Cheng-Ru et al, 2008)[172]. Market growth and strategic Human resource Practices impact OP positively (Apospori et al, 2008)[173]. Human capital, knowledge sharing practices, innovation, and top management's knowledge sharing values contribute considerably to OP (Hsu, 2008)[174]. Market orientation and societal orientation affect organizational performance (Duque-Zuluaga et al, 2008)[175].

Knowledge Management Implementation in organization improves OP (Bos et al, 2008)[176]. Strategic planning processes and quality management processes lead to organizational performance (Yeung et al, 2008)[177]. Attitude, behavior, operational and financial aspects along with teamwork affect OP (Delarue et al, 2008)[178]. Supply chain strategic processes, marketing, financial performance measure OP directly (Kenneth et al, 2008)[179]. Knowledge creation and transfer affect Op positively (Sweet et al, 2008)[180].

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[170] Stone et al, (2007), "The Impact of Information Technology on Individual and Firm Marketing Performance", Behavior & Information Technology, Vol.26(6), p465-482

[171] Lee et al, (2008), "Assessment of Process Improvement from Organizational Change", Information & Management, Vol.45(5), p270-280

[172] Cheng-Ru et al, (2008), "FAHP Sensitivity Analysis for Measurement Nonprofit Organizational Performance", Quality & Quantity, Vol.42(3), p283-302

[173] Apospori et al, (2008), "HRM and Organizational Performance in Northern and Southern Europe", International Journal of Human Resource Management, Vol.19(7), p1187-1207

[174] Hsu, (2008), "Knowledge Sharing Practices as a Facilitating Factor for Improving Organizational Performance Through Human Capital: A Preliminary Test", Expert Systems with Applications, Vol.35(3), p1316-1326

[175] Duque-Zuluaga et al, (2008), "Market Orientation and Organizational Performance in the Nonprofit Context: Exploring Both Concepts and the Relationship Between Them", Journal of Nonprofit & Public Sector Marketing, Vol.19(2), p25-47

[176] Bos et al, (2008), "Realizing the Knowledge Spiral in Healthcare: the role of Data Mining and Knowledge Management", Studies in Health Technology & Informatics, Vol.137, p147-162

[177] Yeung et al, (2008), "Strategic Supply Management, Quality Initiatives, and Organizational Performance", Journal of Operations Management, Vol.26(4), p490-502

[178] Delarue et al, (2008), "Team Working and Organizational Performance: A Review of Survey-Based Research", International Journal of Management Reviews, Vol.10(2), p127-148

[179] Kenneth et al, (2008), "The Impact of Logistics Performance on Organizational Performance in a Supply Chain Context", Supply Chain Management, Vol.13(4), p317-327

[180] Sweet et al, (2008), "The Organizational Performance of Learning Companies: A Longitudinal and Competitor Analysis Using Market and Accounting Financial Data", Learning Organization, Vol.15(3), p225-239

Labor productivity, competitive pay and customer satisfaction affect organizational performance (Subramony et al, 2008)[181]. PMS usage improves OP (Gimžauskienė et al, 2008)[182]. Implementation of quality management systems leads to high performance in organizations (Macinati, 2008)[183]. Innovations in Organizational Governance improve OP (Moore et al, 2008)[184].

Identifying the variables that are repeatedly used by various management systems widely, are identified by this comprehensive exercise of tabulating the variables. This tabulation can also help researchers identify variables for study and while designing an instrument for measuring OI, it is important to choose right variables that would measure OI and that can be widely used by management systems for business applications and decision making.

2.4 Comparison of Variables of OL, OI, and OP from Literature

2.4.1 Variables of Organizational Learning (OL)

Leadership, innovation, Resource management, customer relationship management, knowledge management, global responsibility, support process efficiency, socio cultural dynamics, creating knowledge, continuous learning, strategic process planning, Product & service quality, information sharing, knowledge exchange, memory, learning ability, personal learning effectiveness, human resource practices, information system implementation, entrepreneurial orientation, learning styles, market knowledge and customer knowledge, are the key variables of OL.

[181] Subramony et al, (2008), "The Relationship Between Human Resource Investments and Organizational Performance: A Firm-Level Examination of Equilibrium Theory", Journal of Applied Psychology, Vol.93(4), p778-788
[182] Gimžauskienė et al, (2008), "The Role of Institutional Factors on Changes of Performance Measurement System", Economics & Management, p22-29
[183] Macinati, (2008), "The Relationship between Quality Management Systems and Organizational Performance in the Italian National Health Service", Health Policy, Vol.85(2), p228-241
[184] Moore et al, (2008), "Innovations in Governance", Public Management Review, Vol.10(1), p3-20

From the list of variables of OL, we find that these variables are all found the set of variables that measure OI as discussed below.

2.4.2 Variables of Organizational Intelligence (OI)

Knowledge management, information management, Experiential learning, adapting to environmental changes for strategic planning process, disaster & crisis management planning, Human resource performance management, competitive intelligence, cognitive learning, artificial intelligence, attitudes and practices that get developed into processes, empowerment of lower level employees, decentralized decision making, innovation, adaptability to changing environments, process efficiency, systemic efficiency, learning quality, cultural dynamics, information utilization in strategic planning process, strategic planning and deployment, self controlled and self transforming abilities, transformational leadership, value creating culture, creating alternatives, continual learning, embracing uncertainty, outside in strategic perspective, systems thinking, disciplined decision making, alignment and empowerment, open information flow, employee rights and responsibilities, organizational knowledge management, technology management, intellectual capital, knowledge assets, being adaptable to changes, being rapid in action and reaction, being flexible comfortable, being sensitive, being open-minded, being able to use imagination, being able to renew, effective management and usage of human resources, effective usage of technology, effective usage of knowledge, and organizational learning ability, ORGANIZATIONAL LEARNING, risk taking ability, business continuity, learning ability, decision making, technology transfer, perception of employees by management, employee performance management system implementation, internal competitive environment, organizational culture, rapid action and reaction, quickly adapting to changes, flexible in function, sensitiveness and being predictable open mindedness, the use of imagination, being innovative, ability of the organization to gather information, to innovate, to generate knowledge, and to act effectively based on the knowledge it has generated, inter-organizational networks, hierarchy,

organizational interaction, spiritual intelligence, cognitive, behavioral and social/emotional abilities of learning – are the variables of OI.

We find that, the set of all the variables of OL are in the set of variables of OI as established by Erçetin et al in 2002. "OI is driven by 1) being adaptable to changes, 2) being rapid in action and reaction, 3) being flexible comfortable, 4) being sensitive 5) being open-minded, 6) being able to use imagination, 7) being able to renew, 8) effective management and usage of human resources, 9) effective usage of technology, 10) effective usage of knowledge, and 10) *organizational learning ability* (Erçetin et al, 2002)[185]. This clarifies and differentiates OL as a capability found with intelligent Organizations and may be considered as one of the variables for OI scale design.

2.4.3 Variables of Organizational Performance (OP)

Quality pressure, a professional concern, and financial responsibility pressure, an organizational concern, leadership, service quality, business process planning and management, organizational culture, employee relations, employee benefit schemes and employee health care, ergonomic conditions, service production efficiency, marketing opportunities, service quality and customer satisfaction, Leadership and management practices, Customer satisfaction, employee satisfaction, employee service quality, Human resource practices and systems, customer satisfaction, total quality management practices, Socio technical systems theory practices, resource management practices, productivity, product quality, organizational flexibility, responsiveness to changes in the external environment, systemic efficiency, process efficiency, Process implementation initiatives, Market-driven business units, ORGANIZATIONAL LEARNING, management systems, information technology initiatives, innovation in products, services and processes, financial performance, compensation and resource management, Enterprise Resource Planning implementation, high performance work systems, information quality, and performance quality, employee

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[185] Erçetin et al, (2002), "Action Research... Organizational Intelligence... Curriculum Development..", Educational Research Quarterly, Vol.26(1), p41-50

knowledge, work design, employee retention, employee productivity, product quality, speed of delivery and operating cost, performance metrics, stakeholder relationships, quality management, process management, employee involvement, corporate responsibility to society and stakeholder commitment, administrative efficiency, managing knowledge resources, usage of performance management systems, customer service innovation through process management, organizational architecture, psychosocial interventions to employees, profitability, firm's efficiency, employee productivity, business process management, strategic decision making processes, service orientation, return on total assets, continuous financial performances, customer satisfaction, process innovation, production process, organizational learning, growth, high existing competition on the market, strict economic conditions, budgetary restrictions, requirements of governmental entities for a major efficiency in the assignment of the resources, needs for national and international accreditations, the emergence of rankings for universities, work flow systems, individual performance and attitudes towards the systems, organizational change, cycle time improvement, efficient resource utilization, Market growth and strategic Human Resource practices, Human capital, knowledge sharing practices, top management's knowledge sharing values, market & societal orientation, attitude, behavior, operational and financial aspects along with team work, supply chain strategic processes, marketing, financial performance, knowledge transfer, knowledge creation, labor productivity, competitive pay and customer satisfaction affect organizational performance, innovations in governance – are the variables that measure Organizational performance.

We also find that *Organizational Learning* is a variable that triggers OP as established by Schiller in 2001 - *Organizational learning* and strategy efficiencies and management systems affect OP (Schiller et al, 2001)[186], which again is conformed from the research by Azadeh in 2007 - 1) Financial, (2) customer

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[186] Schiller et al, (2001), "The Effects of Chinese Learning on the Efficiency of Organizational Strategies: An Analysis", International Journal of Management, Vol.18(3), p369-377

satisfaction, (3) process innovation, (4) production process and (5) *organizational learning and growth* are the parameters that measure OP (Azadeh et al, 2007)[187].

Thus we find from the literature that OL is regarded as the learning ability of the organizations and intelligent and performing organizations possess that ability. Also we find that entire list of the variables of OL form a part of the set of all variables that form OI. T

hus scrutinizing these variables as against the suggestions by senior executives of corporations that design measurement systems and develop organizational capabilities and the conceptual models designed by management research academia is essential to decide on the variables. This is discussed in chapter 3 under section "relevance of questionnaire" and chapter 4 "conceptual models from literature" confirms the choice of variables.

2.5 Findings from and Benefits of Literature Survey

The research objectives for this research work evolved from the gap that is found from the OI literature.

There are also different types of definitions and models of OI (Anuradha et al, 2009)[188] found in the literature as listed in Table 2.1.

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[187] Azadeh et al, (2007), "An Integrated Framework for Continuous Assessment and Improvement of Manufacturing Systems", Applied Mathematics & Computation, Vol.186(2), p1216-1233

[188] Anuradha et al, (2009), "Choice of Variables to Design an Instrument for Measuring Organizational Intelligence" Industrial Engineering Journal, IIIE Pb. (Accepted)

Table 2.1 - Definitions and Variables of OI from Literature

Sr. No	Definitions of OI from Literature	Identification of Variables from Definitions
1	Systematic processing of information and knowledge invokes OI	Ability to systematize the processes of information and knowledge Management assets
2	Innovation, Creativity, Imagination to understand processes and systems foster OI.	Ability to be innovative and creative
3	Creativity, organizational design, systems efficiency and intellectual capital are four prime forces that drive OI. Knowledge creation, motivation, intelligence and thinking create intelligent organizations	Ability to have Creativity, Systems Efficiency, And Knowledge Creation and management
4	Efficient information management leads to the birth of intelligent organizations	Ability to manage information
5	The need for information processing models and techniques for understanding business trends and decision making drives OI.	Ability to process information efficiently
	Creativity and Innovation Processes and Implementation of creative ideas are cognitive in nature. OI and Individual's Intelligence are similar and behave in a similar fashion	Being creative in getting and practically Implementing them
	Fundamentally there are 3 factors	Ability to achieve purpose

	that group these 9 aspects of OI are, Achieving the purpose Understanding the environment Mobilizing the resources.	Ability to understand Environment Ability to mobilize Resource
	Ability to achieve the target is defined as OI	Ability to achieve targets
	OI is defined as the ability of organization to decide, learn from decisions made, take risk and share knowledge effectively	Ability to Learn, ability to Manage Knowledge
	OI is defined as the capability of automating database systems and processes effectively. OI is purely a technical parameter measuring the degree of effectiveness in the automation of database systems	Ability to implement Information Technology effectively
	OI is the measure of utilizing information effectively to learn about customers and competitors.	Ability to use customer, market and competitor information effectively
	Intelligent people, when assembled into an organization will tend toward collective stupidity which can be measured with 4 key aspects such as leadership, communities, knowledge platform and adhocracies of problem solving	The need for collective intelligence of people. (i.e)Ability of people to perform collectively
	OL is a component of OI. OL comprises of organizational memory, knowledge, learning, communication and conclusion	Organizational learning abilities
14	OI is defined as the capacity of an	Information systems, Structure

	organization to create knowledge and use it to strategically adapt to its environment. The enablers of OI are Information systems, Structure and culture of organizations, leadership, stakeholder relationships, knowledge assets and strategic processes. It is proposed to use this as the basic model for measuring OI with the chosen samples of small and medium enterprises	and culture of organizations, leadership, stakeholder relationships, knowledge assets and strategic processes
15	OI comprises of learning and retaining ability of organizational learning and knowledge sources.	Organizational learning abilities

The conceptual models of OI proposed by various authors and compared and contrasted in chapter 4 - Conceptual Frameworks from Literature. Although all these models and definitions try to explain OI and OP individually, none of the past research had made an attempt to explore the relationship between OI and OP explicitly. These models that explain the reasons for the presence of Intelligence in Organizations defined with various contexts, however do not measure OI. These specific gaps in the literature pave way to define the research objectives, such as measuring OI and exploring the relationship between OI and OP, and the need for doing this research work.

Considering the first part of the objective of interest – 'Instrument design for measuring OI', it becomes necessary to identify the variables that are being used at various capacities to define OI by researchers and management systems. The commonly used variables that define OI largely should be explored for formulating a mathematical linear equation that might possibly define and

measure OI once the weightages of these variables in such an equation is established. Thus we found variables such as, Leadership and Culture, Rigor in Strategic process Planning and deployment, Health of Stakeholder Relationships, Knowledge and Information Management capabilities, Financial Performance, Systems efficiency, Business Process Efficiency, Product Quality and Service Quality are loftily used by researchers for exploring the presence of intelligence in the organizations.

This comprehensive literature study establishes the fact that, OL is an aspect of intelligent and performing organizations is confirmed by the theory of Clegg in 1999 - 'Learning quality and OL is an outcome of OI' (Clegg et al, 1999)[189]. Comparison of variables of OL and OI also reveals that all the variables of OL are also the variables that define OI. OL is an ability of an organization to learn. This is an outcome of a capability possessed by an organization called Intelligence, which differentiates OL from OI.

Study of Intelligence of an organization is essential to develop certain capabilities to enhance Performance and position itself competitively in market place. This benefit is attained by studying the relationship between OI and OP. If the relationship is established, it would enable management systems to fine-tune and interlink the performance with the variables that possibly create intelligence in the organizations. This benefit is expected from the fact established by Professor Thow that organizations behave like human systems and possess intelligence (Thow, 2002)[190]. According to Professor Thow, 'Human like organizations' are those organizations that possess capabilities such as human beings and behave, act and react like them, thus making this research objectives logical and research work scientific and beneficial to organizations to enhance their capabilities and improvise performances.

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[189] Clegg et al, (1999), "Globalizing the Intelligent Organization", Management Learning, Vol.30(3), p260-282

[190] Thow Yick Liang, (2002), "The Inherent Structure and Dynamic of Intelligent Human Organizations", Human Systems Management, Vol.21, p9-19

2.6   Conclusion

This chapter accumulates and sorts out hundreds of concepts, variables and definitions used by researchers from 1968 to 2008 on OL, OI and OP. This literature study primarily established that OL and OI are same and OL is treated as a capability of intelligent and performing organizations and OL is not same as that of OI. It also establishes the logic behind the objectives and the research study, the benefits to management systems in studying their OI and OP and the underlying linkage between them. This study necessitates the importance of choosing the variables acceptable to both organizations and research academia while designing an OI instrument, which is discussed in detail in next chapter.

This comprehensive survey draws a scientific reason and premise that an instrument to measure OI can be constructed and by fine tuning certain variables that construct OI can help organizations to control their performances. This study brought out few key points. (i) Having many researchers defining OI as a specific humanistic capability of organization (Table 2.1) through various variables re-establishes Professor Thow's proposal to look at organizations as human systems possessing Intelligence. (ii) Organizational Learning is a capability possessed by organizations that are Intelligent. (iii) Measuring OI is important to control the performance of organizations and that is the true benefit of doing this research study. (iv) The mathematical equation that evolves at the end would define OI and its linkage with OP.

In the next chapter, we will discuss about the Research Methods deployed for this research work such as selection of suitable variables to measure OI, designing and developing an OI instrument, sample selection, the issues and challenges in the research processes followed are described.