

ENABLING THE MANAGEMENT EVOLUTION IN INFORMATION TECHNOLOGY DOMAIN: ANALYZING THE INCREMENTAL AND TANGIBLE MANAGEMENT BY OUTCOME (IT MBO)

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Abstract

Management is an evolving practice based on the evolution of knowledge that is required to be applied to solve real-life problems. These real-life work problems and the implementation of knowledge to resolve them is done in the form of projects. With the omnipresence of digitalization, the 21st century, and hereon, we are heavily dependent on how we manage our Information Technology projects. And thus, the management of Information Technology projects becomes one of the most critical aspects of applying knowledge and to sustain further evolution. In this respect, we have to consider, what are some of the limitations as well as what are the indicators of the natural evolution of management in the Information Technology domain. There are different structures in which Information Technology projects are categorized, and there are many management principles, practices, and methodologies aligned with each of them. But we have to find a common strand that would act as a unifying factor that is bound to the basics and provides for the minimum required to sustain this evolution. This study is aimed at finding this factor (or factors) that unifies, simplifies, and standardizes any Information Technology project. Incremental and Tangible Management by Outcome (IT MBO) is the logical evolution of management in the Information Technology domain, which is analyzed through a structured literature review and extensive background industry work building on the two most important constructs of 'incremental approach' and 'tangible output'. This paper would explain the analysis of suitable literature review for Incremental and Tangible Management by Outcome (IT MBO), its application for an Information Technology project, and its relationship with these constructs.

Key words: Management, Incremental approach, Tangible output, Knowledge

Introduction

Incremental and Tangible Management by Outcome (IT MBO) is a logical evolution of management for Information Technology projects. IT MBO works at two fronts, one, it simplifies and standardizes the workings of an IT project, and at the same time, it also handles the two crucial contributors to this methodology which are 'incremental approach' and 'tangible outcome'. We have analyzed a set of IT project management methodologies, such as PRINCE2, PMBOK, Agile, Scrum, KANBAN and DevOps (among many others) to realize that the journey in project management that started with the need to give a structure to ensure the success of an Information Technology project has got into the complexity of technology adoption, tool selection, and assimilation. It should have primarily catered to the success of the project (outcome-oriented) and enabling the process and people to be at their efficient best. An extensive structured literature review to analyze the factors contributing directly (or potentially) to management in the Information Technology domain, exhibits a very clear indicator on this count, exhibiting the relationship that this study captures as Incremental and Tangible Management by Outcome. Furthermore, it establishes knowledge as the base considering Information Technology enterprise as a knowledge-based enterprise and people involved as the knowledge worker. It establishes a multiplicative impact of people, process and product in an Information Technology projects which starts from the basic knowledge to solve a real-life problem, where the knowledge has to ensure compliance with the SLA (Service Level Agreement) and KPI (Key Performance Indicator) for the success of the

$$\begin{aligned}
 & \text{IT MBO} \qquad \qquad \qquad \text{SLA, KPI} \\
 & \qquad \qquad \qquad \qquad \qquad = \qquad \sum_{n=\text{knowledge}} \text{People}(n) * \text{Process}(n) * \text{Product}(n)
 \end{aligned}$$

project.

Figure 1: IT MBO as a summation of People, Process and Product

The study further aims to study the relationship of Incremental and Tangible Management by Outcome (IT MBO) with its two main components, incremental approach and tangible outcome-

$$\begin{aligned}
 & \text{IT MBO} \propto f(\text{Incremental Approach}) \\
 & \text{IT MBO} \propto f(\text{Tangible Output})
 \end{aligned}$$

Figure 2: IT MBO as a function of Incremental Approach and Tangible Output

This study describes how to define the Incremental and Tangible Management by Outcome (IT MBO) and through a detailed and systematic literature review coupled with extensive background industry work and understanding of project management methodologies, it has been able to decipher these basic relationships. These relationships are then utilized to build hypotheses to establish Incremental and Tangible Management by Outcome (IT MBO). The study has worked through several techniques to finalize a suitable methodology to test the hypothesis. In subsequent sections, the study would describe the underlying systematic literature review, hypothesis, methodology, findings, and conclusion.

Literature Review

A systematic literature review was conducted to understand the evolution of management with its explicit and implicit implications for management in the Information Technology domain, considering knowledge, knowledge work, knowledge worker, and knowledge enterprise in this context. The set of papers were selected considering the above as the basic theme, in a 20-year duration spanning the year 2000 to 2019. The study has made a primary note of 106 papers (selected from a pool of more than 250 relevant papers), noted below, and observed the key contributors that emerged when analyzed for this study. The study observes that for a knowledge enterprise, and the study considers Information Technology enterprise as a knowledge enterprise, the critical contributors are people, process, and product, augmented by communication and coordination.

Sr. No.	Journal Name	Paper Title	Author/s	Year	Relevance
1	Journal of Management Information Systems	“IT Value: The Great Divide Between Qualitative and Quantitative and Individual and Organizational Measures”	“Yolande E. Chan”	2000	Value System

2	Journal of Management Information Systems	“Enabling Business Processes through Information Management and IT Systems: The FastFit and Winter Gear Distributors Case Studies”	“Richard M. Kesner Bruce Russell”	2007	IT to enable business
3	Journal of Management Information Systems	“Talk before it's too late: Reconsidering the role of conversation in information systems project management”	“Stefano Mastrogiacom o, Stephanie Missonier & Riccardo Bonazzi”	2014	Communicatio ns
4	Journal of Management Information Systems	“The impact of influence tactics in information system development projects: A control-loss perspective”	“Ravi Narayanaswa my, Varun Grover & Raymond M. Henry”	2013	Communicatio ns
5	Journal of Business Ethics	“The Moral Basis of Stakeholder Theory”	“Gibson, K”	2000	Stakeholder, weighted equal
6	Journal of Business Ethics	“Peter Drucker's Weimar Experience: Moral Management as a Perception of the Past”	“Michael Schwartz”	2002	Stakeholder, Influencers
7	International Journal of Organizational Innovation	“Innovation at the crossroads: An investigation of the link between inter-organizational relationships and innovation”	“Palumbo, R. and Manna, R”	2018	Inter-organization relationship, Innovation, Logit-transformation
8	Management Decision	“Entrepreneurship and innovation management in emerging economies”	“Singh, S. and Gaur, S.”	2018	Emerging markets, Entrepreneurshi p, Innovation

9	Total Quality Management & Business Excellence	“Proposed relationship of TQM and organisational performance using structured equation modeling”	“N. M. Zakuan, S. M. Yusof, T. Laosirihongthong & A. M. Shaharoun”	2010	Total Quality Management, Structured Equation Modelling-conceptual model
10	Procedia Engineering	“The Project Management Maturity Model and Application Based on PRINCE2”	“Zhang Lianying, He Jing, Zhang Xinxing”	2012	PRINCE2, CMMi, P2CMM model (conceptual model)
11	Procedia Technology	“Prince2 or PMBOK – a question of choice”	“Sandra Matosa, Eurico Lopes”	2013	PRINCE2, PMBOK, Lifecycle comparison, Fixed requirement, Frequently changing requirements
12	IEEE Xplore	“Distributed Scrum: Agile Project Management with Outsourced Development Teams”	“Jeff Sutherland, Anton Viktorov, Jack Blount, Nikolai Puntikov”	2007	Agile, Scrum, Line of code, Productivity, Feature, User story
13	OCLC Systems & Services: International digital library perspectives	“Understanding agile project management methods using Scrum”	“H. Frank Cervone”	2011	Agile, Scrum, Iterative, short time to design
14	Journal of Computer Information Systems	“Agile Project Management —Agilism versus Traditional Approaches”	“Daniel J. Fernandez, John D. Fernandez”	2008	Agile, Traditional, Knowledge Work, Knowledge Worker

15	COMMUNICATIONS OF THE ACM	“AGILE PROJECT MANAGEMENT: STEERING FROM THE EDGES”	“Sanjiv Augustine, Bob Payne, Fred Sencindiver, and Susan Woodcock”	2005	Agile, Traditional, Complex Adaptive Systems, Iterative, feedback, Case study, Schedule, Budget, Customer satisfaction, Business value
16	Journal of Management	“Managerial Leadership: A Review of Theory and Research”	“Gary Yukl”	1989	Management, Leadership
17	Journal of Management	“New Venture Growth: A Review and Extension”	“Brett Anitra Gilbert, Patricia P. McDougall, David B. Audretsch”	2006	Entrepreneurship, New age business
18	Journal of Negro Education	“Beyond the Bell Curve: Toward a Model of Talent and Character Development”	“Serge Madhere”	1995	Bell curve, Personnel development
19	Total Quality Management & Business Excellence	“Integration of Six Sigma to traditional quality management theory: an empirical study on organisational performance”	“Meryem Uluskan, A. Blanton Godfrey & Jeffrey A. Joines”	2017	Six Sigma, Total Quality Management
20	Information Technology & Management	“IT Challenges for the New Millennium – Research, Development, and Deployment Issues”	“Sumit Sarkar, Sridhar Narasimhan”	2002	Software Development Life Cycle, Deployment, Quality
21	Information Technology & Management	“Rapid Information Technology Change, Coping Mechanisms, and the Emerging Technologies Group”	“John Benamati, Albert L. Lederer”	2001	Change Management

22	Information Technology & Management	“IT, productivity and organizational practices: large sample, establishment-level evidence”	“Cozzarin, B.P. & Percival, J.C.”	2010	New age enterprise, Traditional enterprise, Knowledge work
23	Information Technology & Management	“Organizational and knowledge management related antecedents of knowledge use: The moderating effect of ambiguity tolerance”	“Ravindran, S. & Iyer, G.S.”	2014	Knowledge Management, Knowledge Work, Knowledge Worker
24	Information Technology & Management	“Determinants of contract completeness for information technology outsourcing”	“Aubert, B.A., Houde, J.F., Rivard, S. et al”	2017	Distributed landscape, Outsourcing, Onsite Offshore
25	Information Technology & Management	“MUTUAL UNDERSTANDING IN INFORMATION SYSTEMS DEVELOPMENT: CHANGES WITHIN AND ACROSS PROJECTS”	“Jenkin, T. A., Chan, Y, E., and Sabherwal, R.”	2019	Change Management, Project Management
26	Behaviour & Information Technology	“Effectiveness of user testing and heuristic evaluation as a function of performance classification”	“Limin Fu, Gavriel Salvendy & Lori Turley”	2002	User Testing, UAT, Alpha Testing, Beta Testing, Quality
27	Behaviour & Information Technology	“Understanding knowledge sharing between IT professionals – an integration of social cognitive and social exchange theory”	“Ming-Tien Tsai & Nai-Chang Cheng”	2012	Social cognitive theory, Social exchange theory
28	Behaviour & Information Technology	“Impact of top management team on firm performance in small and medium-sized enterprises adopting commercial open-source enterprise resource planning”	“Sandra J. Cereola, Benson Wier & Carolyn Strand Norman”	2012	Top Management, Enterprise Resource Planning, Open source software, Weighted Equal

29	Academy of Management Perspectives	“Strategic Entrepreneurship: Creating Value for Individuals, Organizations, and Society”	“Michael A. Hitt, R. Duane Ireland, David G. Sirmon and Cheryl A. Trahms”	2017	New age enterprise, Traditional enterprise, Knowledge work
30	Academy of Management Perspectives	“Who Captures the Value Created with Human Capital? A Market-Based View”	“Janice C. Molloy and Jay Bryan Barney”	2015	Value System
31	International Studies of Management & Organization	“Organizational Environment Revisited: A Conceptual Review and Integration”	“Johan Frishammar”	2006	Org structure, Conceptual model
32	Journal of Consumer Policy	“RFID—the “Next Step” in Consumer–Product Relations or Orwellian Nightmare? Challenges for Research and Policy”	“Slette-meås, D.”	2009	RFID
33	Academy of Management Learning & Education	“WICS: A Model of Leadership in Organizations”	“Robert J. Sternberg”	2017	Leadership, Management
34	Journal of Global Information Technology Management	“Total Quality Management for Information Systems: An Empirical Investigation”	“Myun Joong Cheon & Antonis C. Stylianou”	2001	Total Quality Management
35	Information Systems Management	“Information Resource Management: Foundation for Knowledge Management”	“John van den Hoven”	2001	Resource Management, Knowledge Management
36	International Journal of Intelligent Systems in Accounting Finance & Management	“Process-oriented knowledge management systems based on KM-services: the PROMOTE® approach”	“Robert Woitsch, Dimitris Karagiannis”	2003	Knowledge Management, Knowledge Work, Knowledge Worker
37	International Journal of Intelligent Systems	“Modeling users' preferences in systems for information access”	“Gabriella Pasi”	2003	Conceptual Model, Information System

38	Information Technology & Libraries	“Beyond Information Architecture: A Systems Integration Approach to Web-site Design.”	“Maloney, K., & Bracke, P. J.”	2017	Information Architecture, System Integration, Software System
39	Studies In Health Technology And Informatics	“Risk management and measuring productivity with POAS--point of act system”	“Akiyama M.”	2007	Risk Management, Point of Act
40	Journal of Information Systems Education	“Implementing Service-learning to the Information Systems and Technology Management Program: A study of an Undergraduate Capstone Course.”	“Kangning Wei; Siow, Jane; Burley, Diana L.”	2007	Service based institutions, Information System
41	Total Quality Management and Business Excellence	“Empirical investigation of ISO 9001 quality management systems' impact on organisational learning and process performances”	“Gilles Lambert & Noufou Ouedraogo”	2008	Quality Management Systems
42	Review of Quantitative Finance and Accounting	“Long-Run Performance Following Quality Management Certification”	“Ferreira, E.J., Sinha, A. & Varble, D.”	2008	Quality Management Systems
43	Journal of Information, Information Technology & Organizations	“Competencies and Learning for Management Information Systems”	“Jens Kaasbøll, & Marlen Stacey Chawani”	2010	Management Information Systems
44	Journal of Management Studies	“OUTSOURCING AND OFFSHORE: AN ANALYSIS OF THE ACADEMIC LITERATURE”	“Oliveira, Mirian, Kaytson Hartung & Marcelo Wendling”	2010	Outsourcing Offshoring, Distributed Landscape
45	Journal of Architectural & Planning Research	“OUTSOURCING TO FURTHER HUMAN DEVELOPMENT: THE CASE OF A SOCIAL ENTERPRISE IN CAMBODIA AND LAOS”	“Gurstein, P., O'Neill, J., & Petersen, M.”	2009	Social enterprise, onsite offshore

46	Integral Review- A Journal of Management	“A STUDY ON DIFFUSION OF INFORMATION TECHNOLOGY INNOVATIONS IN ONGOING RESTRUCTURING OF RETAIL BANKING IN INDIA”	“Mr. Hitesh Keserwani, Dr. Kapil Arora”	2012	Information Technology, Software Systems
47	International Journal of Arts Management	“Using Technology to Optimize Customer Relationship Management: The Case of Cirque du Soleil”	“Courchesne, André; Ravanas, Philippe; Pulido, Cristian”	2019	Customer Relationship Management
48	Journal of Management Information Systems	“The Effects of MIS Steering Committees on Information Technology Management Sophistication”	“Jahangir Karimi, Anol Bhattacharjee, Yash P. Gupta & Toni M. Somers”	2000	Management Information Systems
49	Behaviour & Information Technology	“Exposure to information technology and its relation to burnout”	“Marisa Salanova & Wilmar B. Schaufeli”	2000	Information Technology, Knowledge Worker
50	Behaviour & Information Technology	“Discrimination between design errors and user errors by binomial test”	“Lajos Izso”	2000	Quality, Errors
51	Academy of Management Perspectives	“Blown to Bits: How the New Economics of Information Transforms Strategy”	“Voss, Bristol Lane”	2000	Information Technology, Knowledge enterprise
52	International Studies of Management & Organization	“Cross-Border Innovation in the Multinational Corporation: A Research Agenda”	“Ivo Zander & Örjan Sölvell”	2000	Innovation, Distributed geographies
53	Journal of Business Ethics	“Organizational Moralities and Social Transition: Towards a Conceptualization of Organizational Regulation in a Transitional Age”	“Lippens, R.”	2001	Value System, Conceptual model

54	Behaviour & Information Technology	“User-centred design does make a difference. The case of decision support systems in crop production”	“Caroline Parker & Murray Sinclair”	2001	User experience, Software System, Design
55	Academy of Management Perspectives	“Are popular management techniques a waste of time?”	“Mario Fernando”	2001	Traditional Management, New age enterprise
56	International Studies of Management & Organization	“Improving Performance of Product Development Teams through Managing Polarity”	“Jo M. L. van Engelen, Derk Jan Kiewiet & Pieter Terlouw”	2001	Product Development, Product Lifecycle, Software System
57	International Studies of Management & Organization	“The Role and Relevance of Management Cultures in the Organizational Transformation Process”	“Karin Breu	2001	Management culture, Org structure
58	Journal of Global Information Technology Management	“Global Information Technology Management Research: A Reality Check”	“Prashant C. Palvia”	2001	Management culture, Org structure
59	Journal of Management Information Systems	“MEASURING INFORMATION SYSTEM SERVICE QUALITY: SERVQUAL FROM THE OTHER SIDE”	“James J. Jiang, Gary Klein and Christopher L. Carr”	2002	Information System, Quality
60	Behaviour & Information Technology	“Effects of the transition to a client-centred team organization in administrative surveying work”	“Gunvor Gard, Kari Lindströ & Margareta Dallner”	2002	Transition, Transformation, Org structure
61	Academy of Management Perspectives	“Adopting imported managerial expertise in developing countries: The Brazilian experience”	“Thomaz Wood and Miguel P. Caldas”	2002	Management system, New age enterprise
62	Academy of Management Perspectives	“Pursuing competitive advantage through integrated global sourcing”	“Robert J. Trent and Robert M. Monczka”	2002	Distributed landscape, Outsourcing, Onsite Offshore

63	International Studies of Management & Organization	“The Return of the Machine Bureaucracy?: Management Control in the Work Settings of Professionals”	“Dan Kärreman, Stefan Sveningsson & Mats Alvesson”	2002	Management culture, Org structure, New age enterprise, Knowledge worker
64	International Studies of Management & Organization	“Strategy Consulting at the Crossroads: Technical Change and Shifting Market: Conditions for Top-Level Advice”	“Thomas Armbrüster & Matthias Kipping”	2002	Management culture, Org structure, New age enterprise, Knowledge worker
65	Journal of Consumer Policy	“The New German Sales Law: Changing Patterns in the Regulation of Product Quality”	“Micklitz, HW.”	2002	Quality, Product Management, Errors
66	Academy of Management Learning & Education	“Experiential Learning and Its Critics: Preserving the Role of Experience in Management Learning and Education”	“D. Christopher Kayes”	2002	Learning, Leadership, Management, Traditional Management, New age enterprise
67	Academy of Management Learning & Education	“Damned by Our Own Theories: Contradictions Between Theories and Management Education”	“Lex Donaldson”	2002	Learning, Leadership, Management, Traditional Management, New age enterprise
68	Journal of Management Information Systems	“THE CONTINGENT EFFECTS OF MANAGEMENT SUPPORT AND TASK INTERDEPENDENCE ON SUCCESSFUL INFORMATION SYSTEMS IMPLEMENTATION”	“Rajeev Sharma and Philip Yetton”	2003	Management, Information System, Software System
69	Journal of Business Ethics	“Differentiating Stakeholder Theories”	“Kaler, J.”	2003	Stakeholder Management, New age enterprise, Knowledge worker, Weighted equal

70	Behaviour & Information Technology	“User involvement: A review of the benefits and challenges”	“Sari Kujala”	2003	Knowledge Management, Knowledge Work, Knowledge Worker
71	Academy of Management Perspectives	“Taking personal change seriously: The impact of Organizational Learning on management practice”	“Peter M. Senge”	2003	Org structure, Continuous Learning
72	Academy of Management Perspectives	“The seven deadly sins of outsourcing”	“Jérôme Barthélemy”	2003	Distributed landscape, Outsourcing, Onsite Offshore
73	International Studies of Management & Organization	“Mind the Gap between Processes and Practice!: The Role of Improvisation in the Implementation of Information Technology”	“Manuela Faia-Correia”	2003	Management, Methodology, Puritanical approach
74	Journal of Consumer Policy	“Thomas Wilhelmsson, Salla Tuominen, & Heli Tuomola (Eds.): Consumer law in the information society”	“A Brack”	2003	Information System, Quality, Consumer
75	Journal of Management Information Systems	“SPECIAL ISSUE ON ACTION RESEARCH IN INFORMATION SYSTEMS: MAKING IS RESEARCH RELEVANT TO PRACTICE-FIREWORD”	“Richard Baskerville and Michael D. Myers”	2004	Management, Methodology, Puritanical approach
76	Information Technology & Management	“Organizational Management in Workflow Applications – Issues and Perspectives”	“Zur Muehlen, M.”	2004	Org structure, Knowledge worker, Weighted equal
77	Information Technology & Management	“Measuring Information Technology’s Indirect Impact on Firm Performance”	“Chen, Y. & Zhu, J.”	2004	Management Information Systems, Software System, Information Technology

78	Behaviour & Information Technology	“Improving performance on procedural tasks through presentation of locational procedure context: an empirical evaluation”	“Jennifer J Ockerman & Amy R Pritchett”	2004	Management, Methodology, Puritanical approach
79	Academy of Management Perspectives	“The future of leadership: Combining vertical and shared leadership to transform knowledge work”	“Craig L. Pearce”	2004	Management, Leadership, Knowledge work
80	Academy of Management Perspectives	“Project managers doubling as client account executives”	“Sheila Simsarian Webber and Maria T. Torti”	2004	Project Management, Client Experience, Customer Success
81	International Studies of Management & Organization	“Context, Behavior, and Evolution: Challenges in Research on Boards and Governance”	“JONAS GABRIELSSON & MORTEN HUSE”	2004	Org structure, Knowledge worker, Weighted equal
82	International Studies of Management & Organization	“Top Executives' Reactions to Change: The Role of Justice and Exemplarity”	“TESSA MELKONIAN”	2004	Org structure, Knowledge worker, Weighted equal
83	Journal of Consumer Policy	“Inadequate Life? Evidence of Consumer Attitudes to Product Obsolescence”	“Cooper, T.”	2004	Product Development, Product Lifecycle, Software System
84	Academy of Management Learning & Education	“The Gift of Professional Maturity”	“Arthur G. Bedeian”	2004	Management, Leadership, Knowledge work
85	Academy of Management Learning & Education	“Entrepreneurial Cultures and Countercultures”	“William J. Baumol”	2004	New age enterprise, Traditional enterprise, Knowledge work, Entrepreneurship

86	Journal of Management Information Systems	“Antecedents of Information and System Quality: An Empirical Examination Within the Context of Data Warehousing”	“R. RYAN NELSON, PETER A. TODD & BARBARA H. WIXOM”	2005	Software Development Life Cycle, Deployment, Quality
87	Journal of Management Information Systems	“Measuring the Performance of Information Systems: A Functional Scorecard.”	“JERRY CHA-JAN CHANG & WILLIAM R. KING”	2005	Management Information System, Software System, Information System, Knowledge work
88	Journal of Economics & Finance	“DO POWER GARCH MODELS REALLY IMPROVE VALUE-AT-RISK FORECASTS?”	“Ané, Thierry”	2005	Conceptual Model, Information System, Risk management
89	Journal of Business Ethics	“Individual Responsibility within Organizational Contexts”	“Card, R.F.”	2005	Org structure, Knowledge worker, Weighted equal
90	Management Decision	“Organisations, transformability and the dynamics of strategy”	“Chaharbaghi, K., Adcroft, A. and Willis, R.”	2005	Org structure, Knowledge worker, Weighted equal
91	Information Technology & Management	“The Impact of Technology on Relationships within Organizations”	“Montano, B.R. & Dillon, R.”	2005	Org structure, Knowledge worker, Weighted equal
92	Behaviour & Information Technology	“Usage and user experience of communication before and during rendezvous”	“Martin Colbert”	2005	User experience, Software System, Design
93	Academy of Management Perspectives	“Leveraging intellect”	“James Brian Quinn, Philip Anderson and Sydney Finkelstein”	1996	New age enterprise, Traditional enterprise, Knowledge work, Entrepreneurship

94	Academy of Management Perspectives	“The intelligent enterprise a new paradigm”	“James Brian Quinn”	2005	New age enterprise, Traditional enterprise, Knowledge work, Entrepreneurship
95	Academy of Management Perspectives	“The role of the manager: What's really important in different management jobs”	“Allen I. Kraut, Patricia R. Pedigo, D. Douglas McKenna and Marvin D. Dunnette”	2005	Management, Leadership, Knowledge work
96	International Studies of Management & Organization	“Can There Be a Resource-Based View of Politics?”	“NICOLAS DAHAN”	2005	Management, Leadership, Knowledge work
97	International Studies of Management & Organization	“Intrafirm Variation and Change in the Political Strategies of a Multidivisional Firm”	“MIKA SKIPPARI”	2005	New age enterprise, Traditional enterprise, Knowledge work, Entrepreneurship
98	Academy of Management Learning & Education	“Giving Traction to Management Theory: Today's Service-Learning”	“Steven D. Papamarcos”	2005	Management, Leadership, Knowledge work
99	Academy of Management Learning & Education	“Bad Management Theories Are Destroying Good Management Practices”	“Sumantra Ghoshal”	2005	Management, Leadership, Knowledge work
100	Journal of Management Information Systems	“RELIABILITY, MINDFULNESS, AND INFORMATION SYSTEMS”	“Butler, B., & Gray, P.”	2006	Management Information System, Software System, Information System, Knowledge work

101	Journal of Management Information Systems	“THE NATURE OF THEORY IN INFORMATION SYSTEMS”	“Gregor, S.”	2006	Management Information System, Software System, Information System, Knowledge work
102	Journal of Business Ethics	“Stakeholder Multiplicity: Toward an Understanding of the Interactions between Stakeholders”	“Neville, B.A. & Menguc, B.”	2006	Stakeholder Management, New age enterprise, Knowledge worker, Weighted equal
103	Information Technology & Management	“Decision management: Role and effect of using an intelligent intermediary to aid in information sharing”	“Fairchild, A.M.”	2006	Stakeholder Management, New age enterprise, Knowledge worker, Weighted equal
104	Behaviour & Information Technology	“Evaluating causes and consequences of turnover intention among IT workers: the development of a questionnaire survey”	“P. Carayon, J. Schoepke, P. L. T. Hoonakker, M. C. Haims & M. Brunette”	2006	Information Technology domain, Analysis, Survey
105	Academy of Management Perspectives	“Dispelling Some Myths About Offshoring”	“Ann E. Harrison and Margaret S. McMillan”	2006	Onsite Offshore, Distributed landscape
106	Journal of Consumer Policy	“Consumer Power: A Comparison of the Old Economy and the Internet Economy”	“Rezabakhsh, B., Bornemann, D., Hansen, U. et al.”	2006	New age enterprise, Knowledge work

Table 1: Selected set of papers and outcome to build the constructs

With the study of literature and suitable analysis of the same, the paper aims to flag that there is an evolving trend of management where the big business aligned management is now moving to entrepreneurial management, involving IT industry, and where every stakeholder is a knowledge worker and thus everyone

needs to manage their work. Every stakeholder must understand the management required to help excel at their defined job roles and responsibilities. It must be differentiated against the traditional set-up where there was a category of worker (also labor) which needed to be managed by another set of stakeholders, managers. In entrepreneurial management for new-age business, the hierarchical level of worker and manager is blurred, and everyone is an equal partner, here equality infer it's a weighted equal, and weight is in proportionate to every individual's defined job role and responsibilities. Also, there would still be a role for managers in Information Technology, but it is also true that every stakeholder will have to take some responsibilities of management, as it will be an inherent demand for the job. No job in Information Technology is a mundane mechanical job; there is a necessity of knowledge, innovation, smart hard work, communication, and continuous learning and development. It is imperative thus, to drive 'Incremental & Tangible Management by Outcome (IT MBO)' as the preferred management concept to maximize the productive implementation of management. And this is true for every entrepreneurial venture, with Information Technology as the backbone.

The study also addresses the 'emergence of management'. Management, per se, is not tangible that emerged suddenly, though the tangible outcome is an important construct for successful management, especially in the Information Technology domain, where the requirements are both explicit and implicit. Management is a set of intangibles that guides all the stakeholders in an enterprise. Management was intrinsically woven in human history- cavemen/ women's survival is a story of management, the Harappan civilization, its propagation, survival, and then decimation is a case study in management. The ancient Indian account of 'Chanakya-neeti' includes management principles. The management of erstwhile Egyptian rule, the emergence and sustenance of Jesus, the spread and supremacy of the Roman Empire, and then the Roman church, the survival of ancient tribes in India, Africa, and America are all varied flavors of management principles and practices. And each of them is an enterprise. Each of them has multiple stakeholders, doing some enterprise, and creating some tangible output.

The study suggests the advent of new-age entrepreneurial awakening, where management to serve big business must pave the way to management to aid and enrich every stakeholder of an enterprise, irrespective of size or scale. Information Technology projects are the application of knowledge to solve real-life problems. Any stakeholder (manager, etc.) contributing to an Information Technology project is conditioned and compelled by the project management methodologies and the nature of the project in taking any decision. It is always the nature and circumstances of the projects aided by the project management methodologies which creates the decision, that is articulated by those in authority. Managers do the translation & channelization of decisions, which may be right or wrong. Groups of people never take decision in isolation, if they do, it would invariably be catastrophic from a management perspective (no matter what the outcome). The project management dictates, and the stakeholders follow. This is where the study suggests that an incremental approach serves best. At each stage, the decision can be built on each iterative phase, with definite corrective actions for each of these stages. The individual stakeholder or group (people) is always a factor, along-with process and products which forms the independent factors but never the absolute factor. It must cater to the delta, as risk & mitigations, in an iterative approach. Management, expressed through a multiplicative summation of these three attributes is the dependent factor, and other environment variables (including the socio-politico-economic) define the slope. All the experiences of management, in this study, indicate and validate this relationship. Information Technology project is the reality; management is a phenomenon.

Information Technology projects would merit management intervention for its successful implementation, but it may choose to adhere to some of its principles and practices or neglect some.

In a knowledge-based enterprise (Information Technology enterprise), every stakeholder practices management. It is defined by the individual roles and responsibilities. The role of the manager has a set of management principles and practices that they are responsible for. Just as every other role has its own defined set of management principles and practices to perform. Every stakeholder in a knowledge-based enterprise must understand, apply, and enrich suitable management practices, as the role demands. The study discusses management as an intrinsic & ever-present function that is present in every Information Technology project. The study argues that management is available with every stakeholder of an institution (in a knowledge-based

institution) and thus the management principles apply to & must be practiced by every stakeholder of an institution as per the defined roles and responsibilities of each stakeholder. The study aims to cultivate this and analyze its evolution to create a conceptual model which will simplify, streamline and standardize the overall project management with a focused approach to success (outcome-oriented) and improved efficiency for each of people and product. The study considers management to be an ever-existent function, which is in a continuous process of understanding, analysis, enrichment, conditioning in the form of modern management methodologies.

The study describes the understanding of management and its evolution through a corollary with the study and evolution of physics. Just as physics can be described as the study of nature and natural phenomena, management can also be described as the study of institutions and institutional phenomena. Just as physics does not create nature, management does not create Information Technology projects. Nature is truth and physics is a means to understand, analyze, enrich, and codify the nature and natural phenomenon. The institution is truth and management is a means to understand, analyze, enrich Information Technology projects and its principles & practices. Physics can help enable a favorable natural phenomenon and can also help sustain and improve nature. Management can also help enable a favorable output for an Information Technology project and can help sustain and improve it. Through a judicious implementation of management principles, the success and sustainability of an information technology project can be augmented. But just as laws of physics can't function in isolation and must always consider environment variables/ forces (such as a frame of reference, etc.), the management principles are not and can't be implemented in isolation (in the absolute absence of any environmental factors/ forces). The knowledge-based enterprise, primarily the Information Technology and Information Technology enabled Services, must go beyond customer satisfaction to creating a customer value proposition. In an Information Technology project, the customer may not necessarily be always able to visualize, may not know, may not understand, may not appreciate, may not value the business proposition, or provide for the 'how' of it, but, based on the identification of your core service offerings, new age business must go ahead and serve the customer and design tangibles (SLA/ KPI). As a project's tangible output, it would create a great value proposition as well as mature the customer, though it may in cases, at the face of it, lead to initial customer disenchantment as you are prioritizing customer service delivery over customer satisfaction. In an Information Technology project, final delivery (also known as go-live or production release) is a measure of the definitive tangible output. The bedrock of intangible service delivery, also in the context of IT/ ITeS delivery is to contextualize it with tangibles- primarily Service Level Agreements (SLA) and Key Performance Indicators (KPI).

The study also analyzes the differentiation between management and economy. It agrees with Maslow's Criticism, *"Maslow pointed out that the demand for responsibility and achievement may well go far beyond what any but the strong and healthy can take. He sharply criticized Drucker and McGregor for "inhumanity" to the weak, the vulnerable, the damaged, who are unable to take on the responsibility and self-discipline which Theory Y demands. Even the strong and healthy, Maslow concluded, need the security of order and direction; and the weak need protection against the burden of responsibility. The world is not, Maslow concluded, peopled by adults. It had its full share of permanently immature."* But this study opines that the primary reason behind creating work, worker, and working is to provide every willing individual from the society suitable labor for their livelihood and to care for those who can't or won't labor. Everything else, though important and imperative, is secondary. It applies to any work project, and here the Information Technology project, is understood to be a work project to solve a real-life problem. The Incremental and Tangible Management by Outcome (IT MBO) is therefore always focused on the incremental approach and tangible output, so every effort is channelized to ensure we have an outcome. It gives precedence to outcome over every other contributing factor. It considers people as the primary independent factor with aided impetus on communication and coordination. To reemphasize, in a new-age enterprise, every stakeholder manages & works as per assigned roles and responsibilities. Job level and the hierarchy merely design the span of control and place in the hierarchy to enable proportionate decision making. Individual contributor is a very important and critical function in knowledge-based enterprise working on Information Technology projects. Information Technology-based new-age enterprise is a knowledge-based industry, where the people, product, and process are all knowledge-based. Here, every job must be asked the same question, of "greatest possible contribution this job can make", and every stakeholder must have management responsibilities & avenues to upgrade and enrich, that

has become a weighted equal in management parlance (where weight is in proportion to the defined job role and responsibility).

In the new age enterprise of Information Technology projects, project management is a function of a finite customer requirement that it aims to cater, through an outcome-oriented approach. The customer requirement with an outcome-oriented approach would determine the project management for that specific project in a new age enterprise of Information Technology. For example, an Information Technology project to create a search engine that intends to operate in 30 countries (localization for 30 countries) and has an algorithm to provide meaningful search outcomes for 50 domain items, with 100 verified search outcomes per domain, per search. This compared to another search engine that can be accessed from any location (no localization) with a single algorithm for every search and no verification of search outcome. The study suggests that, with the advent of digitalization, it is all about the outcome-oriented approach in catering to your intended customer segment, while focusing on your core service offerings and prioritizing customer delivery over mere customer satisfaction. It is the core customer requirement, specialization, and customer delivery, that defines the management of an Information Technology project, that is, the multiplicative summation of people, process and product including their inherent risks and environmental factors, measured from an initial knowledge base to definitive Service Level Agreements (SLAs) and Key Performance Indicators (KPIs). Incremental and Tangible Management by Outcome (IT MBO) is defined as the function of intended customer requirement (both explicit and implicit) worked through an outcome-oriented approach (which is tangible output with an iterative approach). The implementation of management principles and practices must be holistic. Here, being holistic would mean efficient utilization of people, along-with process, and product. The study suggests that it is not merely whether the project is catering to stated or implied customer requirements driven through continued technological evolution, but the project management must adapt and align with the technological evolution of shape, size, efficiency or feature, etc.

Management is intrinsically there if any institution exists. Information Technology projects and enterprise can be used interchangeably here to study management, through an addendum that enterprise is an institution with the tangible or intangible outcome and with a clear assertion that from management perspective every institution is an enterprise. Information Technology projects are ever-evolving, just as religion as an institution, or civilization as an institution, etc. and thus management practices are ever-evolving. Just like physics has always existed, meaning, the study of nature and natural phenomenon has always existed, and nature always operated with whatever everybody now considers and understand to be a physical phenomenon, for as long as nature has existed. It can't be said that physics has emerged in so & so decade (differentiating between the modern concepts of physics as a branch of knowledge against the existence of physics as the defining function that explains nature). It can of-course be said that the branch of knowledge that is physics, emerged in so & so decade. Similarly, the study implies that it can't be said (must not be said) that management (as the study of Information Technology projects and institutional phenomenon) emerged in so & so decade, but that the term 'management' emerged. From top-level to managers at each level, and now for service industries, enabled through Information Technology, it is 'now' most true than ever, that 'every stakeholder' in an enterprise (and particularly in an IT services and IT-enabled services sector) contribute to 'what our business is and what it should be' (Drucker, Peter, 1973). They must contribute to management practices and principles. It must, therefore, consider every stakeholder's management and try to align every stakeholder's management. This, while respecting and realizing the role of 'manager' as supervisor and decision-maker at different levels (hierarchies) in the chain of command. Management practices are not the exclusive domains for the designation or role of managers. Every stakeholder of a knowledge-based enterprise performs management functions invariably, to manage one-self, the effect it creates on the peer, overall chain, and environment variables. It is high time management principles are democratized. To reiterate, every stakeholder in knowledge-based enterprise practices and contributes to the management function. In this regard, the manager is just another role of the enterprise chain that performs and contributes to the management function. Overall, Incremental and Tangible Management by Outcome, would consider the definite attributes of People, Process, and Product and further analyzes the constructs of incremental approach and tangible output.

Hypothesis

The study started with understanding and analyzing the natural evolution of management and focused on its implementation for Information Technology projects. Further, it analyzed and worked through available project management methodologies to substantiate the implication of this evolution. Ultimately, it came up with the question, 'How can we make an IT project outcome-oriented?'. This question served as the base for this study, and through the systematic literature review and industry work, it observed the relational approach to justify the same.

The two main constructs of the incremental approach and tangible output were observed as part of the initial work. Both these constructs, incremental approach and the tangible outcome are testable through an Information Technology project and they would be defined by the study subsequently through a set of measurable parameters. The study analyzed these constructs to establish that,

“Incremental approach is a contributing factor to outcome-oriented project management”

“Tangible output is also a contributing factor to outcome-oriented project management”

The systematic literature review and its indicators (as described in Table 1) and the industry work indicators (as illustrated through Figure 1 and Figure 2), along with the widely prevalent Information Technology project management methodologies and standards of Agile, PRINCE2, PMBOK, KANBAN, SCRUM, DevOps, etc. also substantiates the findings of the conceptual model on which this study builds on. It manifests as,

If an Information Technology project follows an iterative approach, then it would enable outcome-oriented project management.

If an Information Technology project aims for tangible output at each project phase, then it would enable outcome-oriented project management.

This relationship was tested to hypothesize that-

Ho1- Incremental approach does not contribute to outcome-oriented project management

Ha1- Incremental approach contributes to outcome-oriented project management

Ho2- Tangible output does not contribute to outcome-oriented project management

Ha2- Tangible output at each project phase contributes to outcome-oriented project management

Methodology

The study explores various methodologies to find the best fit to test the hypothesis. The nature of this hypothesis is such that it needs to be studied and analyzed for an Information Technology project over a defined period. It would also require defining attributes for the construct under study and validate them with run-time project data. The study considered three methodologies, survey, case-study, and Delphi technique. A survey was already considered as a method to understand and analyze a wider group of participants which proved the convergence to the underlying evolution of project management methodologies and adherence to its principles and practices (Jain, Ravi & Preetam, Abhishek, 2020). The study would consider the case study approach in verifying the conceptual model, as future work. Delphi technique was selected as the methodology for this study, keeping in mind the 'estimate-test-estimate' feature. The study has created the baseline estimate based on the structured literature review and real-time industry experience, which would be tested through this study, and the conclusion would be the next set of estimates, in the form of a conceptual model with suitable inputs arrived based on the study responses. The Delphi technique allowed for a focused set of experts who would provide an anonymized response, thus eliminating any bias. Also, because the study was involved with real-time Information Technology project, the Delphi technique helped ensure we do not need to get into any confidential project data and kept the focus on project management attributes only.

The Delphi technique implementation started with a select group of fifteen experts, who are working in mid to higher-level management, with extensive experience of handling multiple Information Technology projects of varied domains, in a distributed landscape. This was conducted over six months, from December 2019 to June 2020, when the respondents were working for different projects, a large client project from FMCG (Fast Moving Consumer Good) in India, a leading client in Telecom domain in Singapore and a leading client in Banking domain from the US, among others. As has been noted earlier, none of the discussion ever involved any project related confidential data, it was only restricted to project management principles and practices. The responses were anonymized, and only collective responses were provided back to the respondents.

The study had one facilitator and fourteen experts, the facilitator had utilized the systematic literature review and their own industry experience in-line with the hypothesis under test, to discuss and explain the two constructs of 'incremental approach' and 'tangible output'. This estimation started the Delphi sessions, which were conducted in-person and on-call. The study defined the total number of sessions at four and the first session was conducted as an open-ended session where attributes were defined for each of the two constructs. Subsequent sessions involved sharing questionnaires to map each of the attributes and participants were encouraged to provide free-flowing information, based on their extensive & credible past work experience, but also the current project experience to get the run-time inputs. After the five sessions, the responses were collected, and their mean and median scores were computed to comment on the findings.

Findings

The first Delphi session conducted was an open-ended session to set up the attributes for the two constructs of 'incremental approach' and 'tangible output'. The expert group decided on the final approach for this as, first, defining these set of attributes to describe each Information Technology project stage and then, to analyze and comment that at each of these project phase, does it correspond to 'incremental approach' and 'tangible output' and respond and discuss on it based on the project experience in run-time and other suitable considerations. The expert group came from different Information Technology project type, to cover a wider canvass, from presales to delivery, including support & maintenance and audit reporting. The experts came from various skill set around consulting, audit, analysis, development, testing, support & maintenance, and reporting, among others. This ensured a wider palette and a more exhaustive set of responses, as well as, ideation behind each response would be covered.

While describing the project phases, along-with the run time experience of each expert, the facilitator made available two sets of information. One, the gist of this study, its aims, and purposes as well as the systematic literature review, and second, the existing project management methodologies, such as PRINCE2, PMBOK, Agile, Scrum, KANBAN, DevOps, etc. As the experts also covered different skill sets, such as development or testing, they would also come with their understanding of an Information Technology project phase, in line with, say, a software development life cycle or software testing life cycle, etc. This served as the base response in defining the attributes for the project phases. The challenges around this were to navigate through the available knowledge and experience, mitigate the biases based on expertise in any particular skill or predominance of a particular project management methodologies. The underlying theme was to come to a standardized and unified phase item as attributes. After intense deliberations, the group, collectively came to a common conclusion, in defining these phases as-

1. Conceptualization
2. Design
3. Implement
4. Test
5. Rollout
6. Most Viable Product (MVP)

7. Product
8. Product Enrichment
9. Go-live

As described earlier, it catered to both the skill-based life cycle, such as, for software development life cycle in conventional mode, it would be requirement analysis, design, development, test, deploy, support & maintain and existing project management approach, such as for PRINCE2, starting a project, initiating a project, directing a project, managing a stage boundary, controlling a stage, managing product delivery and closing a project. There would similarly be different interpretation when viewed from, for example, a software testing life cycle or DevOps implementation or when following Agile methodology to run a project. The agenda of discussion was, what are the minimum but mandatory phases we run for an Information Technology project and the outcome was the 9 phases described above, with each phase catering to-

1. Conceptualization- scoping and managing essentials to start, run and close the project (what all it will take?), including Service Level Agreements (SLAs) & Key Performance Indicators (KPIs)
2. Design- convert the functional, non-functional and technical requirement into mockups, creating system and code level architecture and defining the standards for each stage
3. Implement- development of the features and their integration as part of the overall landscape
4. Test- performing quality assurance, quality control, and quality engineering activities
5. Rollout- alpha version of the integrated features in a controlled environment
6. MVP- the rollout of the integrated features as MVP in a distributed controlled environment
7. Product- deliver the integrated features as a business product to enable a business-driven evaluation and informed decision making
8. Product enrichment- feedback mechanism to enrich the business product from business and users (both internal & external) and other relevant stakeholders' input, including notes on any limitation (system, architecture, technical, functional, environmental, etc.) or future possibilities
9. Go-live- final output, where the product is made available to the intended end customer in an uncontrolled environment

The group unanimously agreed on these definitions and described the conditions for successful project implementation as-

- Necessary: Every Information Technology project must have a successful and sustainable Go-live
- Minimum: Every Information Technology project must have a stable final release
- Exhaustive: Every Information Technology project must lead to integrated feature/s which go through an end to end Product Lifecycle Management (PLM) cycle of product conceptualization to roll-back/ expiry, cutting across all intermediate phases

Each of these 9 phases could be utilized in a way as it suits the philosophy of each project, and there is no hard compartmentalization. The next three sessions were dealt with a questionnaire as below-

Section A: Incremental approach contributes to outcome-oriented project management in Information technology domain, understood through each phase of a project, phases were defined in the first open-ended session and mutually agreed by all participants-

1.	Conceptualization-	Yes	No
2.	Design-	Yes	No
3.	Implementation-	Yes	No
4.	Testing-	Yes	No
5.	Rollout-	Yes	No
6.	Most Viable Product-	Yes	No
7.	Product -	Yes	No
8.	Product Enrichment-	Yes	No
9.	Go-live-	Yes	No

Section B: Tangible output at each project phase contributes to outcome-oriented project management in Information technology domain, understood through each phase of a project, phases were defined in the first open-ended session and mutually agreed by all participants-

1.	Conceptualization-	Yes	No
2.	Design-	Yes	No
3.	Implementation-	Yes	No
4.	Testing-	Yes	No
5.	Rollout-	Yes	No
6.	Most Viable Product-	Yes	No
7.	Product -	Yes	No
8.	Product Enrichment-	Yes	No
9.	Go-live-	Yes	No

For incremental approach, the expected working is that each of the phases gets iterated through a set of feedforward and feedback mechanism and there is always a provision for delta (δ) catering to this input, such as,

Conceptualization(δ)-> Design(δ)-> Implement(δ)-> Test(δ)-> Rollout(δ)-> Most Viable Product (MVP)(δ)-> Product(δ)-> Product Enrichment(δ)-> Go-live(δ)

The expert group response was to relate, respond, substantiate, discuss, and help arrive at a consensus on these counts.

In the case of tangible output, here in Information Technology parlance and for this study, tangible doesn't necessarily imply physical or material, tangible implies pre-defined and measurable. That is why, in the framing of Incremental and Tangible Management by Outcome (refer Figure 1) it was described as a multiplicative summation of people, process and product that starts from knowledge (to solve a real-life problem) and measures up to Service Level Agreement (SLA) and Key Performance Indicator (KPI). Each of these 9 defined project phases was analyzed for the possibility of the creation of the tangibles and measuring up on those.

After three further rounds of sessions, the final response set was-

Yes	1
No	0

Incremental approach contributing to outcome-oriented project management in Information Technology domain														
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10	Expert 11	Expert 12	Expert 13	Expert 14
Conceptualization	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Design	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Implement	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Test	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rollout	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Most Viable Product (MVP)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Product	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Product Enrichment	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Go-live	0	0	0	0	0	0	1	0	1	1	0	0	1	1

Figure 3: Final Delphi session response, incremental approach to outcome-oriented management

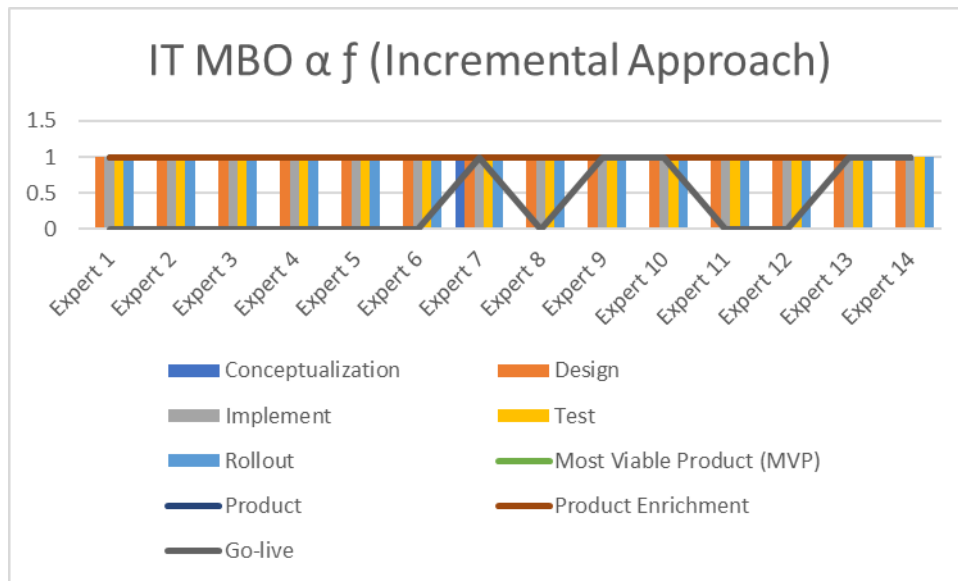


Figure 4: IT MBO α f (Incremental Approach)

Yes	1
No	0

Tangible output at each project phase contributing to outcome-oriented project management in Information Technology domain														
	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10	Expert 11	Expert 12	Expert 13	Expert 14
Conceptualization	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Implement	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Test	1	1	1	1	1	1	0	1	0	0	1	1	0	0
Rollout	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Most Viable Product (MVP)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Product	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Product Enrichment	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Go-live	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 5: Final Delphi session response, tangible output to outcome-oriented management

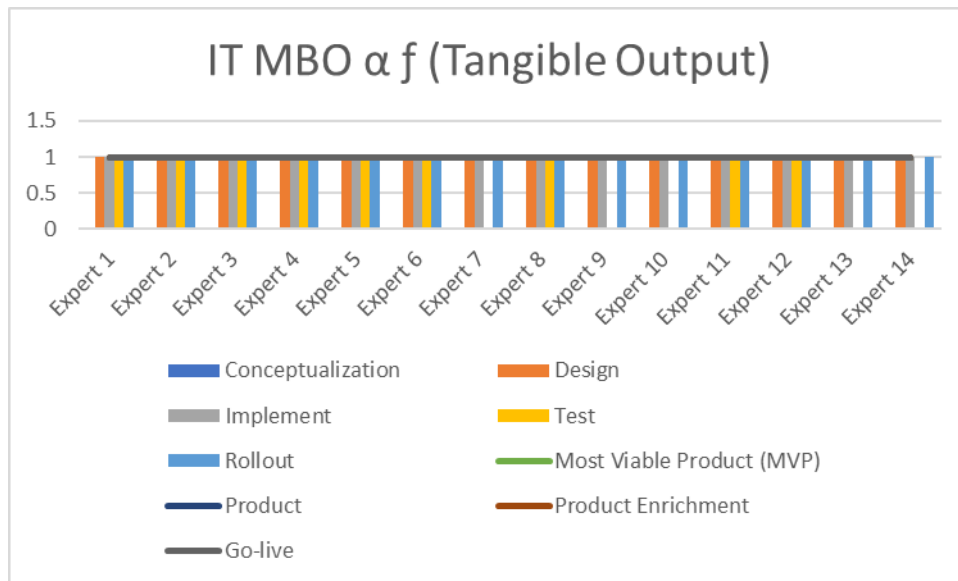


Figure 6: IT MBO α f (Incremental Approach)

This result substantiates that the responses indicate us with information that may reject the null hypothesis.

Ho1- Incremental approach does not contribute to outcome-oriented project management

Ho2- Tangible output does not contribute to outcome-oriented project management

It would further allow the study to accept the alternate hypothesis-

Ha1- Incremental approach contributes to outcome-oriented project management

Ha2- Tangible output at each project phase contributes to outcome-oriented project management

Conclusion

The study was aimed at understanding and evaluating management with an outcome-oriented approach based on the two constructs of incremental approach and tangible output. This method of Incremental and Tangible Management by Outcome (IT MBO) was verified through the Delphi technique to conclude that an incremental approach and tangible output does contribute to Management by Outcome. Further, the study defined a set of phases for an Information Technology project, from Conceptualization to Design, Implement, Test, Rollout, Most Viable Product (MVP), Product, Product Enrichment, and Go-live. The phases were not compartmentalized but to be utilized efficiently as per the need of the project and selected methodologies. It catered to an Information Technology project with an exhaustive span of presales to the delivery mode including consultation, analysis, audit & reporting. It covered the three core components of software development, testing, and support & maintenance.

Future Work

The study would be carried forward by creating and augmenting a conceptual model that would be put to test through real-life Information Technology project through Incremental and Tangible Management by Outcome and the results would be analyzed for conformance and further improvements.

Tables And Figures

Page 3 to 21- Table 1: Selected set of papers and outcome to build the constructs

Page 2- Figure 1: IT MBO as a summation of People, Process and Product

Page 2- Figure 2: IT MBO as a function of Incremental Approach and Tangible Output

Page 31- Figure 3: Final Delphi session response, incremental approach to outcome-oriented management

Page 31- Figure 4: IT MBO α f (Incremental Approach)

Page 31- Figure 5: Final Delphi session response, tangible output to outcome-oriented management

Page 32- Figure 6: IT MBO α f (Incremental Approach).

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