

'Methodology for Selection & Implementation of Current & Future Technology with Business Strategy'

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Abstract—To succeed in today's business environment, organizations need to develop the ability to use current & future technologies and manage business performance. Technology is powerful. That power can be translated into competitive advantage it helps you run your business more efficiently and more profitably. The good news is: there's a lot of technology. The bad news is: there's a lot of technology out there - making things very confusing. An effective selection & implementation of technology with business strategy should enable business to perform better. This Review Paper describes how to identify Key Performance Indicators of business & implement technology with business strategy for delivering excellent performance.

Keywords - Technology, business strategy, Key performance indicators

I. INTRODUCTION

Today's world is characterized by high technology businesses. So it requires extensive planning to recognize & revolve uncertainties in the production & services. Technology is the collection of techniques, skills, methods and processes used in the production of goods or services or in the accomplishment of business objectives. All level of managers & engineers of businesses make choice to evaluate key performance indicators. They also command the respect, confidence & loyalty of subordinates. Further they work on understanding of business strategy to make a high technology enterprise.

Role of Technology with Business Strategy- Use of technology requires strategic decisions about technology use in functional areas, such as production, marketing, sales, finance and so on. Thus two cultures-technical and functional – need to be bridged, and management should integrate technology strategy with business strategy. Thus the integration of technology with business unit and business strategies has become an important aspect of business for its success.

Strategy- Alfred Chandler one of the most famous researchers in strategy suggested, strategy is determination of the basic long term goals & objectives of an enterprise and adoption of courses of action with allocation of resources necessary for carrying out these goals. Michael porter relates strategy to the success or failure of a company obtaining a competitive position that lead to superior & sustainable performance.

II. EASE OF USE

Strategic Decision Models-

A. Mintzberg Model-

Strategic decisions can do by Entrepreneurial Mode, Adaptive Mode & Planning Mode details as below:
Entrepreneurial Mode –Strategy is done by single person. Focus is on opportunities

Adaptive Mode - Characterized by reactive solutions rather than proactive search of opportunities.

Planning Mode –Systematic information gathering for situational analysis, generating alternative strategies & selection of appropriate strategy

B. Management by Objectives Concept (Formulated by Drucker) –

MBO helps to translate broad organizational goals & objectives into specific individual objectives. It is a management model that aims to improve performance of an organization by clearly defining objectives that are agreed to by both management and employees. Peter Drucker five steps to put management by objectives into practice as below:

Determine organizational objectives, translating the organizational objectives to employees, stimulate the participation of employees in the determining of the objective, monitoring of progress, evaluate & reward achievements.

KPI's of Business-

KPIs are tools that may be used by an organization to define, measure, monitor, and track its performance over time toward the attainment of its stated organizational goals.

KPI Definition- Key Performance Indicators (KPIs) are quantitative and qualitative measures used to review an organization's progress against its strategic goals. These are broken down and set as targets for achievement by departments and individuals. The achievement of these targets is reviewed at regular intervals. KPI Characteristics – Identified in the literature are listed below

Relevant and consistent with the organization's vision, strategy and objectives

Focused on organizations strategic value rather than non-critical local business outcomes – selection of the wrong KPI can result in counterproductive behavior and sub optimized outcomes

Realistic – fits into the organizations constraints and cost effective

Specific – clear and focused to avoid misinterpretation or ambiguity

Attainable – requires targets to be set that are observable, achievable, reasonable and credible under expected conditions as well as independently validated

Measurable – can be quantified / measured and may be either quantitative or qualitative

Timely – achievable within the given timeframe

Understood-- individuals and groups know how their behaviors and activities contribute to overall agency goals

Used to identify trends – changes are infrequent, may be compared to other data over a reasonably long time and trends can be identified

Governed – Accountable & responsibility is defined and understood

Model to Select Appropriate Technology with Business Strategy-

Organizations require competencies, people & processes involved on working for successful implementation of methodology. Top layer of model consist of strategy creation which involves strategy of business driven environment. Top managers define strategy & goals with (Political, Economic, Social & Technological) PEST analysis. In second layer operational decision makers need information & knowledge that supports the selected strategy. Third layer of model consists of KPI identification. Analysts, controllers, & report developers create the information & knowledge to be used by company’s operational decision makers with the purpose of innovating & optimizing day to day activities. Next layer starts with technical environment. Technical managers access the current technology & requirement of new/future technology for business strategy & competitiveness. Database specialist or ETL developers merge & enriches data and makes it available to top management for decisions.

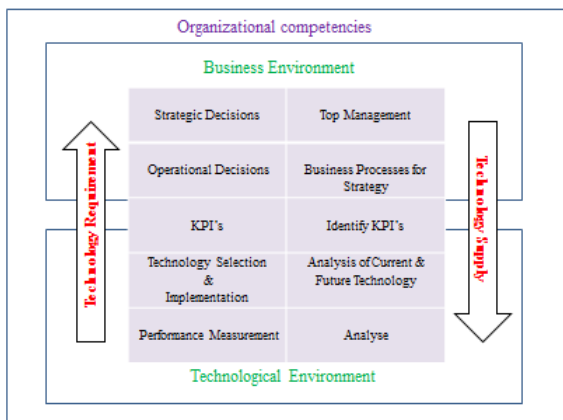


Fig1: Model to Select Technology

Methodology for Implementing Model-

Strategic Decisions – Top management decides business improvement areas by scanning external environment & takes strategic decisions to match with vision, mission & objectives of the organization.

Operational Decisions -- Organizations exist to exchange value with customers and other stakeholders - that’s strategy. They do this via a series of coordinated activities across a number of functional elements of the organization - that’s a process. It makes sense to optimize these processes so that they satisfy the requirements of customers and other stakeholders - that’s process improvement. Taking a coordinated view of the performance of all of the processes by which an organization exchanges value, optimizes performance - that’s process management. Process management allows organizations to focus on activities that create the value exchange outcomes described by the strategy - that’s execution.

KPI's-

Normally strategies will result in a number of key performance indicators with the purpose of measuring the degree of progress & success. The contents of the KPI’s will depend on which underlying business process we want to control. KPI could relate to profitability or different targets. KPIs derive much of their impact from the targets associated with them, it’s important to differentiate between types of targets. Enterprise performance software defines five types of targets:

1. **Achievement:** Performance should reach or exceed the target. Anything over the target is valuable but not required. Examples include revenues and satisfaction.
2. **Reduction:** Performance should reach or be lower than the target. Anything less than the target is valuable but not required. Examples include overtime and attrition
3. **Absolute:** Performance should equal the target. Anything above or below is not good. Examples include in-stock percentage and on-time delivery
4. **Min/max:** Performance should be within a range of values. Anything above or below the range is not good. Example: mean time between repairs.
5. **Zero:** Performance should equal zero, which is the minimum value possible. Examples include employee injuries and product defects.

Reading KPIs -Reading KPIs should be straightforward. Users should be able to look at a visual display that has been properly encoded and know instantly whether a process or project is on track. But we find that many employees don’t know how to read KPI displays—or more alarming—how to interpret KPIs. Seven attributes. To assist users with interpreting KPIs, a good performance dashboard displays seven attributes for each status, trend, KPI name, actual value, Target value, variance & variance percentage. Variance measures the gap between actual and target and is displayed using text or a micro bar chart or bullet chart. Variance percentage divides the variance against the target. These seven attributes combine to provide valuable insight into the state of performance.

Qualitative & Quantitative KPI's of Business-

In the field of statistics, we distinguish variables as qualitative (or attribute) when those variables are not gauging an amount. Qualitative variables aren’t performance measures. But they are used to analyze measures, e.g.

slice customer satisfaction rating into product groups to explore which products or technology related to product or service to prioritize for improvement. Two types of Quantitative variables are continuous and discrete. Continuous variables can take any value (including decimals) over a range, and are measured in units like kilograms, hours and minutes and seconds, dollars and cents. Discrete variables are generally counts of things like complaints, accidents, and new customers – anything that takes an integer value. This includes rating scales for measuring attitudes, such as satisfaction or agreement on a 10-point scale. KPI Metrics for technology –

Area	Methods
Unit of analysis	Quantitative Or Qualitative
Identification	List of KPI's
Compile	With Business Strategy
Utilization / Share with Organization	Implementation
Performance	Business

Fig 2: KPI Metrics

Technology Selection & Implementation –

Selecting & implementing technology is an expensive proposition in terms of dedicated resources & time. It will instantly help organization to improve performance with a competitive advantage.

Tips to select & implement Technology –

1. Get upper management support
2. Make a clear & extensive list of requirements before you start looking at technology vendors
3. Carefully evaluate options
4. Get references
5. Think before you customize
6. Factor in change management
7. Appoint an internal team
8. Provide necessary time & resources
9. Training for new developments

Performance Measurement – The gap between leading KPIs, lagging KPIs, and operational KPIs raises the question about how to deploy, align, and integrate these metrics across different business units, departments, and levels within an organization. To answer this question, it's important to understand the differences between strategic, tactical, and operational performance dashboards. Generally, strategic dashboards comprise outcome KPIs, operational dashboards show driver KPIs and operational metrics, and tactical dashboards have a mix of outcome and driver KPIs.

Performance Dashboard

	Strategic	Tactical	Operational
Focus	Organizational Goal	Optimize process	Control Operation
Use	Management Executives	Analysis Managers	Monitoring Staff
Scope	Enterprise	Department	Operation
Metrics	Outcome KPI	Outcome & Driver KPI	Driver KPIs
Sources	Manual, External	Manual, Core system	Core Systems
Looks Like	Scoreboard	Portal	Dashboard

Fig3: Dashboard to Integrate

Strategic Dashboards -- Strategic dashboards, or scorecards, are designed to enable senior executives to execute strategy, manage performance, and drive new or optimal technology across the enterprise. As such, they consist largely of outcome KPIs that measure past performance. It focuses on an organization to new strategic direction data can be obtained from external sources.

Tactical Dashboards -- Tactical dashboards are designed to help mid-level or departmental managers optimize the performance of the people and processes under their supervision. These dashboards collect summary and detailed data largely from operational systems, so managers and their analysts can identify problems and devise fixes to ensure they achieve their short- and long-term objectives. As such, their dashboards comprise both outcome and driver KPIs. In many cases, a tactical dashboard looks more like a portal that managers can customize to suit their business needs and personal preferences.

Operational Dashboards -- Finally, operational dashboards enable front-line workers to monitor and control core processes on an intraday basis. These dashboards are populated with detailed data from operational systems and comprise driver KPIs and operational metrics. These dashboards trigger alerts when predefined thresholds are exceeded and often resemble automobile dashboards.

AMP Framework –

This framework helps to design performance dashboards & methodology for selection & implementation of current & future Technology with Business Strategy. AMP stands for Analyse, Monitor & Perform

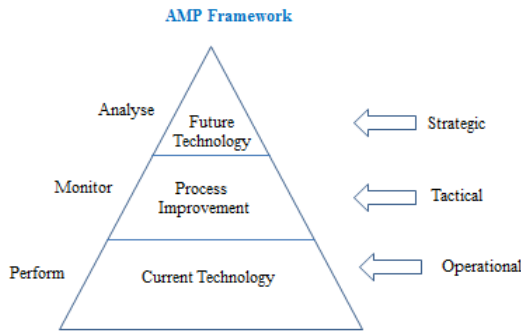


Fig4: AMP Framework

CONCLUSION –

Technology has progressed in all business sectors by creating modern marvels out of ideas. It has almost always been synonymous with ‘advancement,’ and has had applications in nearly every realm of human existence. The impact of technology has been immense, constant and lasting. Technology has a very deep impact in the field of organization and management as well. If one looks at the overall effect of technology of any kind on management and organizations, it is understood that it assumes a direct correlation to ease and efficiency, as it does in every other field. Essentially, progress in technology ensures higher efficiency when it comes to every step of a process. Creating KPIs is hard work and there are no shortcuts. The task can be made significantly easier if executives have taken the time to create a well-articulated strategy and kept it up to date. Lacking that, teams assigned to create dashboards or scorecards will struggle to define KPIs that align with strategic objectives and move the organization in the desired direction. All the analysis in the world won’t create a perfect KPI. That’s because KPIs are designed to drive human and organizational behavior. We can only say that without selecting & implementing current & analyzing future technology no business can achieve its ambition or even run smoothly today. One of the most consistent patterns in business is the failure of leading organizations to stay at the top of their industries when technologies or markets change. Established organizations invest aggressively—and successfully—in the technologies necessary to retain their current competitiveness. This review paper gives an idea to organizations how to select & implement new technology with KPIs & monitor the business performance in competitive environment.

ABBREVIATIONS AND ACRONYMS:

MBO: Management by Objectives
KPIs: Key Process Indicators
PEST analysis: Political, Economic, Social & Technological analysis.
ETL: Extract Transfer & Load
AMP: Analyse Monitor & Perform

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