

DETERMINING BUSINESS VALUE OF IT INVESTMENTS IN SMALL & MEDIUM ENTERPRISES



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Process, Tools and Guidelines

An Initiative of
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This document is intended as an aid for managers in small and medium enterprises responsible for investment decisions in information technology. It provides them with process, tools and guidelines to better estimate and articulate business value of such investments.

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EXECUTIVE SUMMARY

Matching IT investment to the business value it generates has long been a Holy Grail for executives in the Information Technology (IT) function of the enterprise. There are two polarized viewpoints. The decision maker (CEO/CFO) believes that he/she is spending far too much on IT for the value the business receives, and seeks to reduce spending in alignment with its perceived value. The IT manager, on the other hand believe that his/her function is under-funded, preventing IT from delivering optimal value to the business. The inability to meaningfully measure IT's contribution to business, results in all round dissatisfaction. In the absence of a model to determine value, "cost of IT" has become the de-facto measure for value delivered.

The challenge is particularly severe in small and medium enterprises (SMEs). SMEs ability to make investments tend to be limited and often IT does not take priority. When investments are made in IT, the returns are expected to be rapid and in the short term. Often IT is managed by a mid level manager who is not equipped to determine and articulate the value of IT investments nor effectively influence the process with the decision maker - the CEO of the organization. However on the positive side, the IT landscape tends to be simple, allowing each investment to be evaluated in isolation for its return, should the SMEs be equipped with a framework for this purpose.

This report aims to assist SMEs in their IT investment decision making process by enabling them determine the business value of an IT investment. The report recommends the right set of tools, process and guidelines for this purpose.

Chapter 1 introduces the scope and objectives of the report. Chapter 2 classifies IT initiatives into different categories and recommends the appropriate project viability measures that should be adopted for each category. Chapter 3 describes the overall process for articulating the business value of IT investments. It introduces the concept of cross-industry and industry-specific IT initiative variants, for which tools and guidelines are recommended. Chapters 4 and 5 discuss two case studies to which the process, tools and guidelines were applied.

CHAPTER 1 – INTRODUCTION

In economically turbulent times, expenditures relating to Information Technology (IT) come under significant scrutiny. It is pronounced especially in small and medium enterprises (SMEs) where cash flows come under pressure.

IT investment in SMEs are characterized by a few aspects – one, significant investments are restricted to a one or two in a year. Two, decisions are made by the CEO or CFO of the organization, even though they are not always IT savvy. Three, IT Heads are not familiar with quantifying benefits, leading to sound recommendations not fructifying into an investment.

Objectives

The objective of this report is to aid IT managers in SMEs determine and articulate the business value of an IT initiative. Specifically, the report assists the IT Manager:

- Categorize the IT initiatives and identify suitable project-viability measures
- Select the right tools for collating the cost and benefit items
- Quantify the business value to aid in Go/No-Go decision
- Measure the promised business value, post implementation

Approach

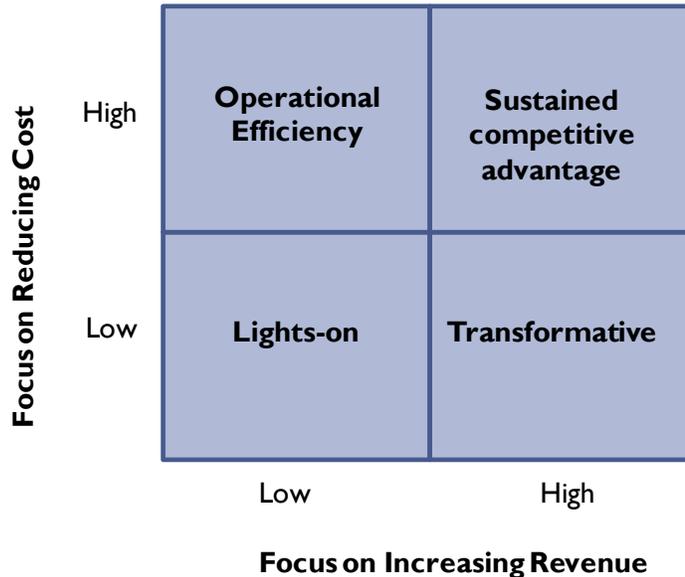
The study provides the following enablers to determine business value:

- IT Framework: Categorizing IT initiatives
- ROI Tools – Tools to help quantify business value
- Repository of major cost elements in an IT initiative

CHAPTER 2 – IT INITIATIVE CATEGORIES AND VIABILITY MEASURES

Categories of IT Initiatives

The categorization of IT initiatives are depicted in Figure 1



RADHIKA: PLS CHANGE "SUSTAINED COMPETITIVE ADVANTAGE" TO JUST "COMPETITIVE ADVANTAGE"

PLS CHANGE THE ORIENTATION OF "Focus on Reducing Cost" to it being horizontal

FIGURE 1 – TYPES OF IT INITIATIVES

Project viability measures

Project viability measures, financially can be looked at from three perspectives: -

- Investment based – Focuses on the cost of the project
- Income based – Focuses on the income generated by the project. (Key assumption being that the organization can attribute incremental income generated directly to the project in question)
- Cash-flow based – Focuses on both costs and benefits of the project

Figure 2 depicts various project viability measures viewed from these three perspectives.

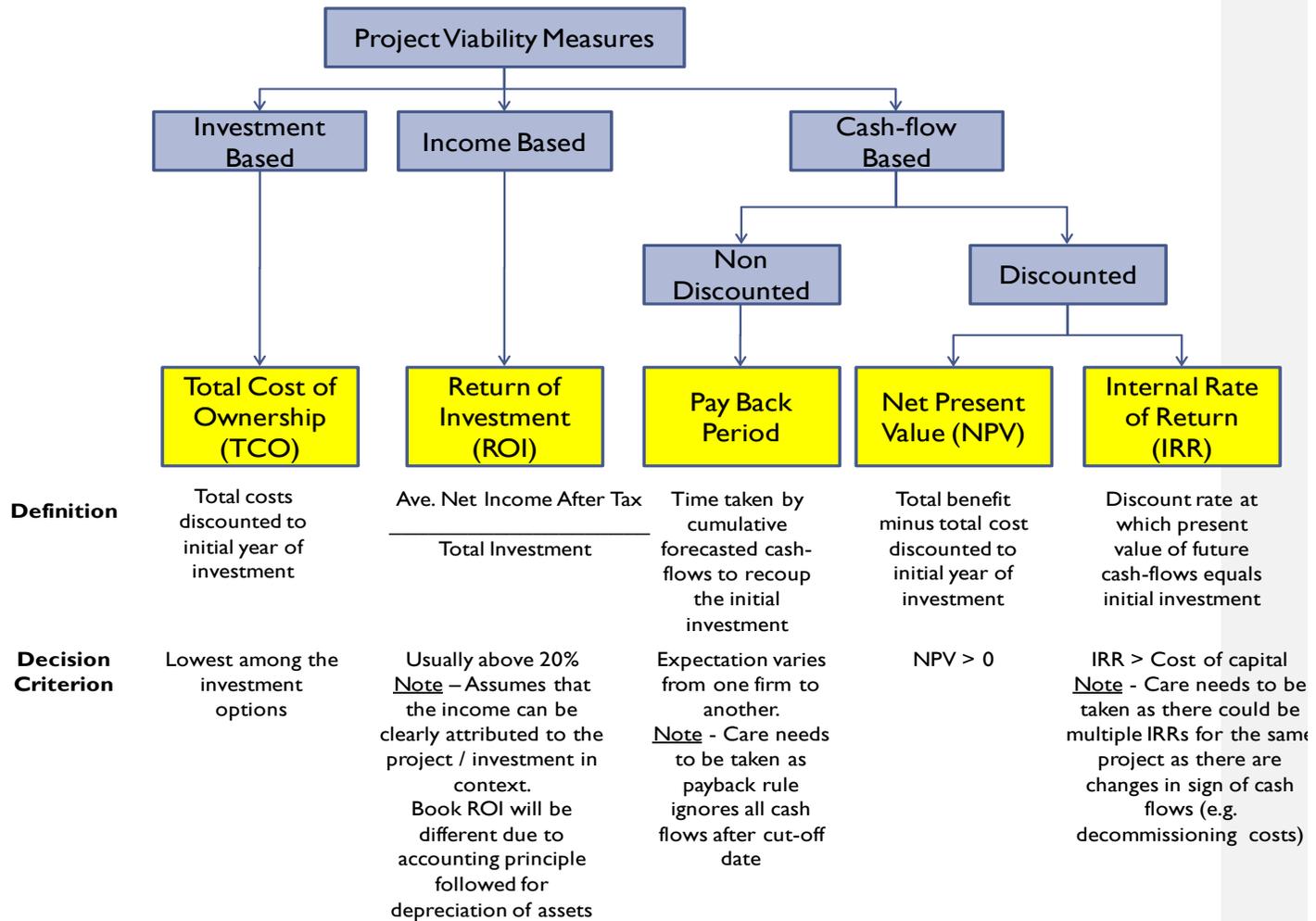


FIGURE 2 - PROJECT VIABILITY MEASURES

The definition and decision criterion for each of the viability measures are shown in the figure.

Mapping of IT initiative categories to project viability measures

Table 1: Maps IT initiative category to project viability measures

IT Initiative Category	Project Viability Measure	Reasons
Lights-on	TCO	<ul style="list-style-type: none"> For an IT enabled business to be up and running, there are minimum investments in IT that needs to be done, periodically. These include technology upgrades (to avoid risk due to obsolescence and therefore lack of support); regulatory compliance etc. Such investments would seem not to have direct benefits. However they result in lowering both risks and costs.

		<ul style="list-style-type: none"> ▪ The best measure for such investments is - TCO (Total Cost of Ownership)
Operational efficiency	NPV	<ul style="list-style-type: none"> ▪ IT investments aimed at improving operational efficiency primarily look at avenues for cost reduction ▪ Cost reduction can be categorized into various buckets - indirect labour savings, direct labour productivity improvement, inventory cost reduction, net operating cycle cost reduction etc. ▪ Such investments rarely result in increase in revenue and hence ROI (Return on Investment) is not a good measure. ▪ We recommend usage of NPV (Net Present Value) as the appropriate measure for determining business value. ▪ <u>Note</u> - As mentioned in Figure 2, care should be taken if payback period or IRR measures are used. Payback period is not discounted and does not take into account cash flows beyond the cut-off period chosen by the enterprise. IRR becomes complicated if there are multiple cash flow sign changes. For some projects, IRR may not exist.
Competitive advantage	ROI or NPV	<ul style="list-style-type: none"> ▪ IT initiatives for competitive advantage have benefits flowing from both cost reduction as well as increase in revenue. ▪ If the cost reduction component is predominant, we recommend usage of NPV measure. If increase in revenue component is predominant, we recommend usage of ROI measure.
Transformative	ROI	<ul style="list-style-type: none"> ▪ Transformative IT initiatives bring in additional revenues, market share and profits. Hence ROI, that considers net income after tax, is recommended as the right measure. ▪ <u>Note</u> - As mentioned in Figure 2, care should be taken to ensure that the depreciation of assets is based on investors' expected rate of return rather than on accounting principles

TABLE 1 - MAPPING OF IT INITIATIVE CATEGORIES AND VIABILITY MEASURES

Note – For all the categories, business risk adjusted measures as well as an inclusive decision making process would improve the chances of management funding IT initiatives. This is discussed in next section.

Handling uncertainties and risks

The project viability determination based on the measures discussed in the previous section, are only as good as the data used, viz. cost items (negative cash flows) and benefits (positive cash flows). However, due to

uncertainties and business risks, cost may be higher or benefits lower than projected. In order to account for the risk, the following techniques are recommended: -

Techniques	Description and Usage
Sensitivity Analysis	<ul style="list-style-type: none"> ▪ Various determinants (such as market share, unit price etc.) are viewed from three scenarios - pessimistic, expected and optimistic and corresponding values are estimated. Project viability is measured vis-à-vis the three values. ▪ The underlying assumption is that the parameters are not interrelated
Scenario Analysis	<ul style="list-style-type: none"> ▪ If the parameters are interrelated, various plausible scenarios are considered based on which the values are determined.
Breakeven Analysis	<ul style="list-style-type: none"> ▪ This helps to look at the point beyond which the project will begin to lose money. (e.g.: “number of units sold” at which NPV becomes zero, would be the break-even point for the project/initiative.)

TABLE 2 – TECHNIQUES FOR HANDLING UNCERTAINTIES AND RISKS

For example, consider a technology-version-upgrade project, be it application, system software or hardware. Such a project would be categorized as a lights-on IT initiative. Reason for such project would be to prevent technology obsolescence and/or withdrawal of support from the manufacturer that could result in business risks for the organization. If the IT Manager was to merely present a TCO perspective, it would not provide a convincing case for the CEO to approve the investment. The IT Manager would be better served by adopting scenario analysis technique wherein multiple scenarios are created reflecting varying business risks, like higher costs due to penalties (regulatory non-compliance or legal disputes), loss in revenue due to non-availability of IT systems (e.g. stock brokerage firms are dependent on high up-time of IT systems) etc.

The involvement of business managers to decide on the probabilities associated with various business risks will enable the IT manager come up with a realistic business-risk weighted NPV (since there are notional positive cash flows due to mitigation of business risks) for various scenarios. Such an inclusive decision-making process is especially useful in lights-on projects that otherwise seemingly make very little sense, if merely viewed from a TCO perspective.

In summary, choosing an appropriate measure of success and involving the business in quantifying risk factors can go a long way in accurately determining the value of IT investments.

CHAPTER 3 – PROCESS, TOOLS AND GUIDELINES

This chapter details a structured process for the IT manager to follow when he/she decides to submit an initiative for approval. It recommends tools and guidelines that can aid the process.

Business Value Articulation Process

Figure 3 depicts the overall process for articulating business value of an IT initiative. The process is structured into 3 phases: -

- Categorize Initiative – Has been covered in detail in chapter 2. The guidelines for categorization are discussed in a later section in this chapter.
- Quantify Value – Discusses various types of IT initiatives, both cross-industry and industry-specific. An important decision point characterizing this phase is the selection of appropriate tools and guidelines for quantifying business value.
- Prove Value – Provides an approach for measuring and proving the business benefits post the implementation of the IS system.

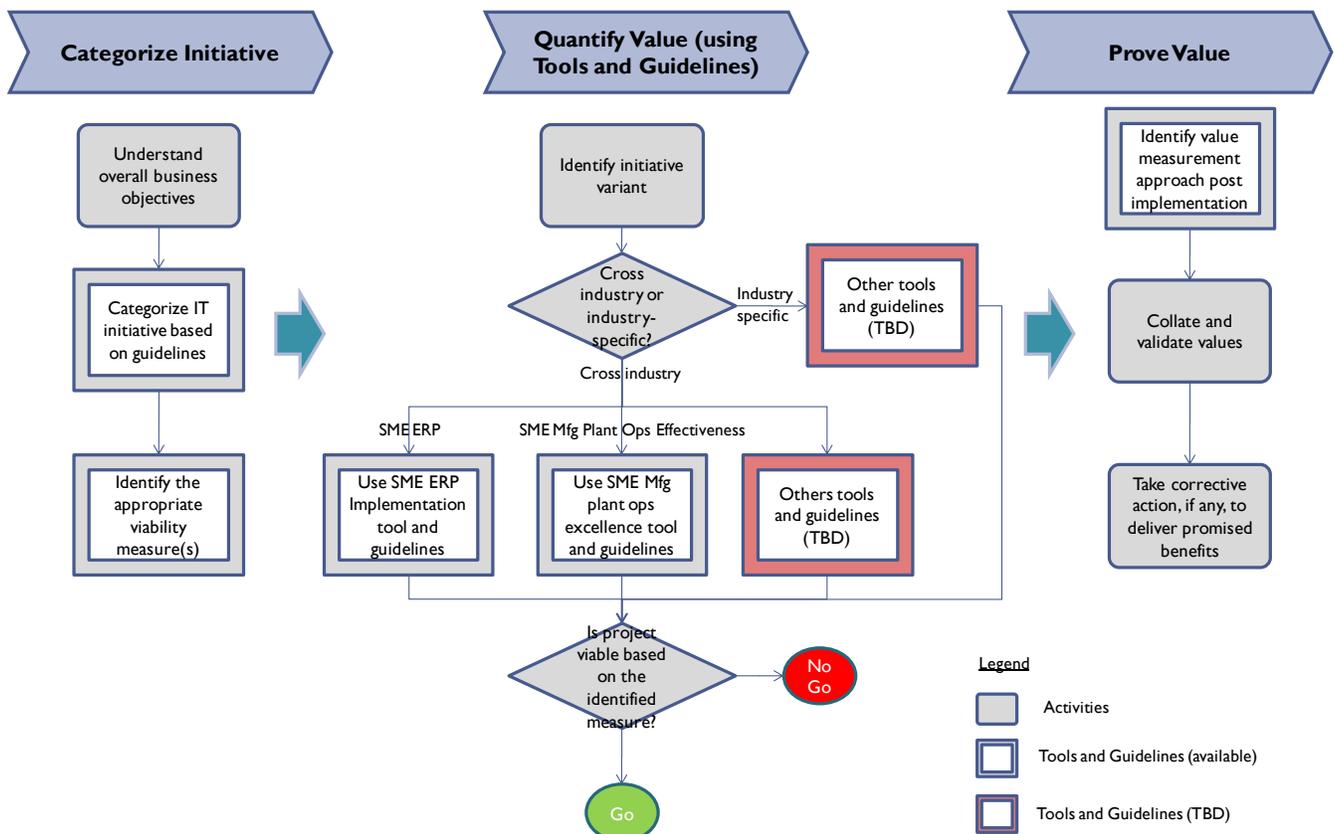


FIGURE 3 - OVERARCHING PROCESS FOR BUSINESS VALUE ARTICULATION

Quantify Value

Usage of appropriate tools is key to quantifying the value of any project. Three tools were shortlisted (Table 3) for evaluation. The names of tools have been intentionally masked.

Tools Name	Purpose	Deployment
Tool A	Technology Decision Making	Excel based
Tool B	Generic ROI tool for Solutions	Proprietary Tool
Tool C	Enterprise Resource Planning Implementations	Excel based

TABLE 3 – SHORTLISTED ROI TOOLS

Table 4 provides a comparison of the shortlisted tools against a number of evaluation criteria.

Evaluation Criterion	Tool A	Tool B	Tool C
Industry and Business Process specific benefit modelling	No	No	No
Availability of most cost items related to the investment	No. Need to enter all cost line items	No. Need to enter all cost line items	No. Need to enter all cost line items
Easy to understand and communicate	Yes	Not known (Proprietary application. Trial version not available for evaluation)	Yes
Easy to change assumptions driving the model	Yes. Basic financial metrics like discount rate etc. However, other parameters can only be introduced outside the tool	Not known	Yes. Basic financial metrics like discount rate etc. However, other parameters can only be introduced outside the tool
Provides key project	Yes	Yes	Yes

viability measures			
Allow Risk Modelling	No	No	No
Perform Sensitivity Analysis	No	No	No
Allows customization	Yes. The cost and benefit line items & a few other parameters can be modified. However, time period granularity cannot be altered	Not known	No
Provide Target versus Actual metrics comparison	No	No	No

TABLE 4 – COMPARISON OF ROI TOOLS

Key findings from tool evaluation

- Most of the tools were either excel-based or windows based applications. They allow the users to enter cost as well as benefit line items on a quarterly or yearly basis.
- All the tools calculate various project viability measures based on the inputs provided by the user (i.e. – costs and benefits)
- Some of the tools help in generating a project viability report (Microsoft word document or other formats)
- All of them lack in providing
 - A repository of cost line items as well as benefit line items. ERP ROI calculator (Tool C) defines to an extent the buckets under which business benefits can be accrued.
 - An overarching process for categorizing IT initiatives that drives the costs and benefits
 - An approach to measure and collate actual metrics post implementation

Based on the evaluation, it is appropriate to conclude that no single tool is likely to provide comprehensive support for all types of IT initiatives. They help calculate the project viability measures, but do not identify the cost and benefit line items.

We propose the approach of identifying the different variants of IT initiatives: cross-industry or industry-specific. This would help in determining the specific tools and guidelines for articulating the business value.

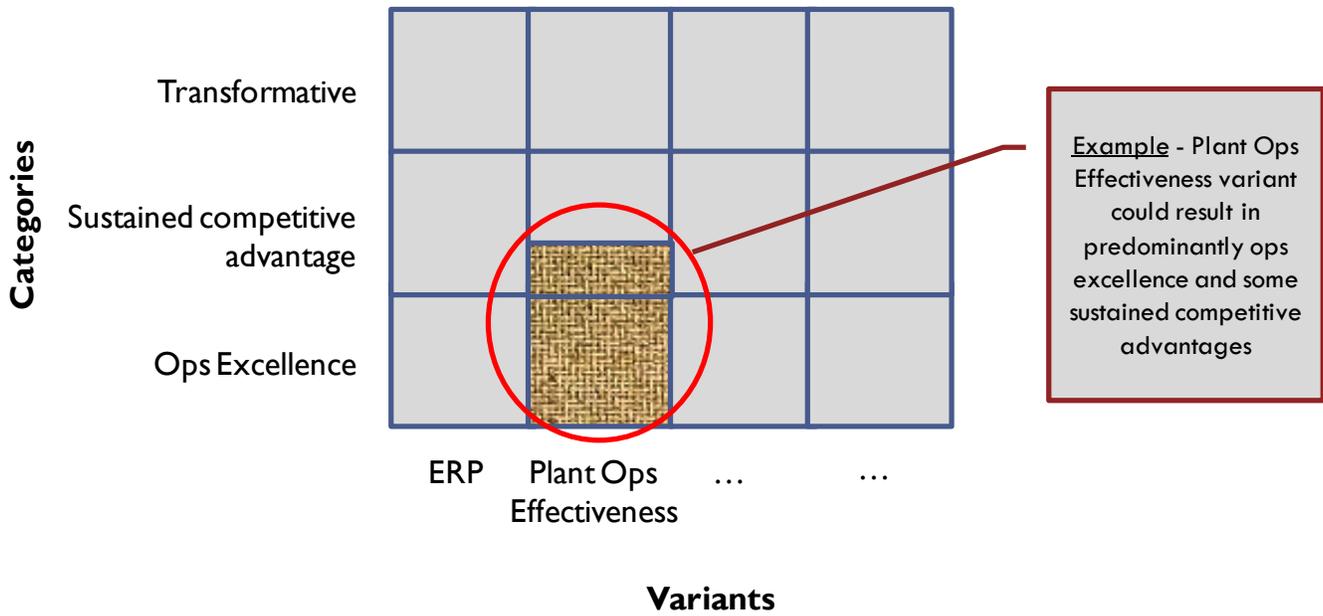


FIGURE 4 – CATEGORIES AND VARIANTS MATRIX

Figure 4 is a matrix where each cell could potentially have a specific tool and guidelines associated with it.

In this report, we have identified two “cross-industry” variants. Each is elaborated using a case study in the following chapters. The two industries and the initiatives are:

1. SME (Small & Medium Enterprise) - ERP Implementation
2. SME - Manufacturing Plant Operation Effectiveness

We believe that describing the approach for these two cases will help the reader implement a similar approach for his/her industry.

Prove Value

The process of determining value is not complete till the promised value is computed. The measurement approach should take into consideration veracity of the data collated and the linkage between the measured value and causal effect, without which it would be difficult to claim success of the IT initiative.

[Appendix D](#) talks about a few guidelines.

Tools and Guidelines

Following is the reference to various tools and guidelines referred to in the process (Figure 3): -

IT Initiative Categorization - Guidelines

Refer [Appendix A](#)

Mapping of IT Initiative to Project Viability Measure - Guidelines

Refer “Table 1 - Mapping of IT Initiative Categories and Viability Measures”

SME ERP Implementation - Tool & Guidelines

Refer [Appendix B](#)

SME Manufacturing Plant Operations Effectiveness - Tool & Guidelines

Refer [Appendix C](#)

Value Measurement Approach - Guidelines

Refer [Appendix D](#)

Cost Line Item Repository

The following 7 categories of costs are considered: -

1. Application software
2. System software
3. Hardware – backend Servers (Data Centre)
4. Network setup and connectivity
5. Hardware - Frontend (PCs, Printers, Scanners etc.)
6. Implementation and Installation Services
7. Annual Maintenance Services

For further details, refer [Appendix E](#)

CHAPTER 4 – CASE STUDY OF ERP/POS INITIATIVE IN A MEDIUM MANUFACTURING CUM RETAIL ENTERPRISE

Context

An adventure sports and outdoor equipment manufacturer and retailer embarked on an IT initiative to implement an ERP and Point of Sale (POS) system. The company was about 8 years in the business and has been growing at a stupendous pace due to which its CFO felt the need for introducing information technology. The initial software package deployed was not scalable, as the number of retail stores grew at a fast pace. The CFO decided to invest in an ERP cum POS solution, positioned for SMEs.

Following the Business Value Articulation Process

Categorizing the initiative

The business objectives of this initiative were: -

- Streamline operations (production and retailing) through an automated system
- Improve processes and reduce people dependency as the operations scale-up
- Achieve a daily view of sales in retail stores
- Utilize people's time more efficiently in core business activities
- Reduce time lag between production and availability of new products in retail stores
- Achieve right pricing of products to maximize profitability (especially given that most raw materials are being imported and are subject to forex fluctuations)

Most of the above mentioned business objectives are focused on achieving “operational excellence” while the last two objectives are tilted towards bringing “competitive advantage”.

Initiative variant and Quantifying value

The software product chosen to be implemented was an SME ERP from a well known software provider. A 3rd party service-provider was engaged to do the initial set up/customization of the software product as well as host the entire solution on a pay-per-user basis. Since this was a cross-industry ERP solution, no major industry-specific aspects came to the fore. We considered this initiative to be an SME cross-industry ERP variant.

Proving value

This enterprise had clear measurement mechanisms in place that helped determine the value, post implementation. Since documenting the case study, the decision makers have a good idea of benefits they had reaped out of the IT investment. The details of value measurements are available in the attached excel document.

CHAPTER 5 – CASE STUDY OF PLANT OPERATIONS EFFECTIVENESS INITIATIVE IN AN AUTO COMPONENT MANUFACTURING ENTERPRISE

Context

A leading spring manufacturer that supplies components to automotive majors in India, embarked on an initiative to improve its overall plant operations. The company has 12 manufacturing plants with hundreds of machines, ranging from fully-automated to manually-operated. The IT head of the company was entrusted with the initiative to quantify the overall plant performance that in turn could help in identifying issues that need corrective action.

Following the Business Value Articulation Process

Categorizing the initiative

The company already had a manual process to collect data at a machine level to calculate machine utilization and productivity rate (Figure 5). However, the veracity of the data was often in question. There was no mechanism to identify root-cause of issues that resulted in stoppage of machines or reduction in productivity.

Work Center	Date	Time	Time	WO #	Qty Comp	Run Time	Setup Time	Downtime	Code	Pcs/min	Pcs/min	Performance	Downtime reason codes
103	6 Nov 09	06:00 AM	22.5	1034325	4,500	180				35	25	0.71	
	6 Nov 09	06:20 AM						40	2/4				
	6 Nov 09	09:00 AM		1032829			270						1 Machine Setting
	6 Nov 09	02:00 PM						80	6				2 Coil loading
	6 Nov 09	02:00 PM		1032829	5,000	270				30	19	0.62	3 Machine repair
	6 Nov 09	06:30 PM		1032718			180						4 Tool maintenance
	6 Nov 09	10:00 PM						40	6				5 Machine resetting
	6 Nov 09	12:30 AM						50	2/4				6 Sample checking
	6 Nov 09	04:00 AM						20	4				7 No operator
	6 Nov 09	06:00 AM		1032718	20,000	450				60	44	0.74	8 No order
	7 Nov 09	06:00 AM	22.5	1032718	1,000	20				60	50	0.83	9 No power
	7 Nov 09	06:20 AM		1034760	21,000	430				60	49	0.81	10 No air
	7 Nov 09	06:30 AM						40	2/4				11 Waiting for raw material
	7 Nov 09	10:20 AM						10	12				12 Machine cleaning
	7 Nov 09	12:00 PM						30	2				13 Others
	7 Nov 09	05:00 PM						40	2/4				14 Raw material problem
	7 Nov 09	08:00 PM		1034760	22,000	450				60	49	0.81	15 Quality problem
	7 Nov 09	08:45 PM						30	4				16 Electrical problem
	7 Nov 09	10:00 PM		1034760	22,000	450				60	49	0.81	17 Sample order
	7 Nov 09	12:30 AM						50	2/4				

FIGURE 5 – MACHINE LEVEL DATA COLLECTION (A SAMPLE)

The business objectives of this initiative were:

- Introduce a quantitative index of plant performance starting at the machine level
- Reduce labour efforts and avoid manual errors in data collation
- Raise red flags on a near real-time basis on sub-optimal performance to enable corrective actions
- Improve plant and machine utilization
- Increase customer satisfaction through better quality
- Evaluate potential for increased revenue in a competitive environment

In our parlance, the initiative fits into operational excellence category, although achieving these objectives could ultimately result in the organization gaining competitive advantage.

Initiative variant and Quantifying value

In order to quantify plant operations, there has to be a comparable quantitative index. Overall Equipment Effectiveness (OEE) is one such measure that helps in arriving at an overall plant operations measure, beginning at the machine-level.

OEE data is used to identify a single asset (machine or equipment) and/or single process related losses for the purpose of improving total asset performance and reliability. It is used to identify and categorize major losses or reasons for poor performance. OEE provides the basis for setting improvement priorities and root cause analysis. OEE percentage is used to track and trend the improvement (or decline) in equipment effectiveness over a period of time. OEE percentage can point to hidden or untapped capacity in a manufacturing process and lead to balanced flow.

The components of OEE are:

- Availability = Operating time/ Planned production time
- Performance = Ideal cycle time/Actual cycle time
- Quality = Good output/Total output

$OEE = \text{Availability} * \text{Performance} * \text{Quality}$

Overall plant operations effectiveness could be arrived at using weighted average of OEE of all the machines in that plant.

The OEE data that was manually collected in this organization was error prone. There were no standards being followed across plants. The first intent of the initiative was to build confidence in OEE data. The benefits of such an initiative was expected to accrue over 4 phases, as shown in Figure 6.

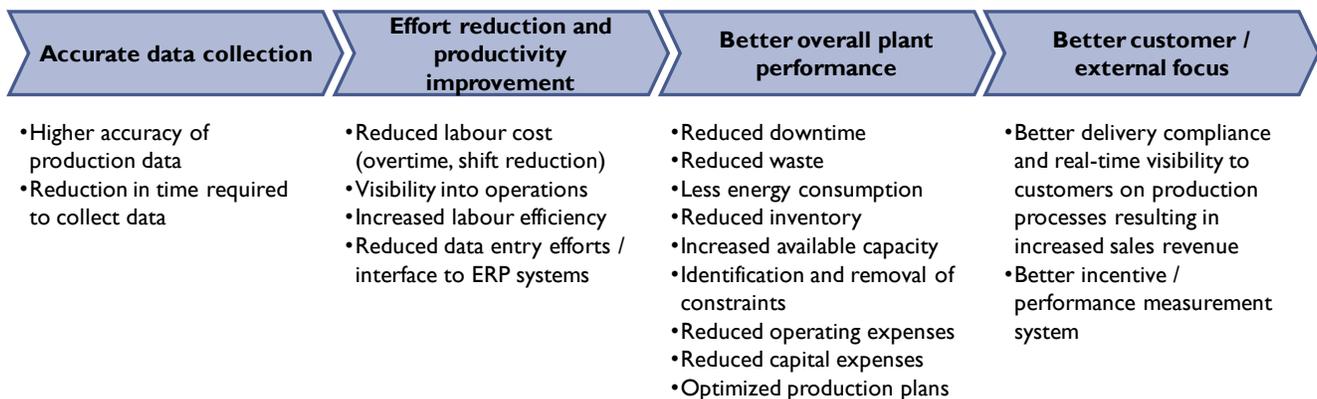


FIGURE 6 – ACCRUAL OF BENEFITS DUE TO PLANT OPS EFFECTIVENESS INITIATIVE OVER 4 PHASES

During discussions, it was determined that it is possible to quantify benefits only in steps as the plant effectiveness has to evolve over a period of time in a phased manner. So, we restricted our scope to creating a business value framework ([Appendix C](#)).

REFERENCES

1. "Using Overall Equipment Effectiveness: the Metric and the Measures", Robert M. Williamson, 2006

APPENDIX A – IT INITIATIVE CATEGORIZATION - GUIDELINES

<p>IT Investments Resulting in Decrease in Costs</p>	<p>High</p>	<p>Operational Efficiency</p> <ul style="list-style-type: none"> • Internal focus: Technology or Operations • Enhance efficiencies • Lower cost of operations • Required to stay competitive (existence could be threatened if not done) • Brings economies of scale • Brings about quality improvements • Usually accompanied by process changes • Increased level of automation 	<p>Sustained competitive advantage</p> <ul style="list-style-type: none"> • External/ Customer Focus: Business facing initiative • Incremental differentiation in end product/ service • Required to sustain market share • Enhance customer satisfaction • Improve time to market • Enabling lower cost to customer • Strengthen product or service line
	<p>Low</p>	<p>Lights-on</p> <ul style="list-style-type: none"> • Technology centric focus • On-going maintenance • Mandatory activities to run the business • Technology upgrades (End-of-Life) • Regulatory and Compliance • Incremental enhancements along with Continuous Improvement 	<p>Transformative</p> <ul style="list-style-type: none"> • External/ Customer Focus: Business facing initiative • Game changer in Market • Hard to Follow (Distinctive First Mover Advantage) • Enable new streams of revenue (product or service) • A fundamental shift in Business model • Allows entry into new markets
		<p>Low</p>	<p>High</p>
<p>IT Investments Resulting in Increase in Revenue</p>			

Figure 7 lists out various attributes of each category. The list can be used as a generic guideline for SMEs to decide as to which category their proposed IT investment falls into.

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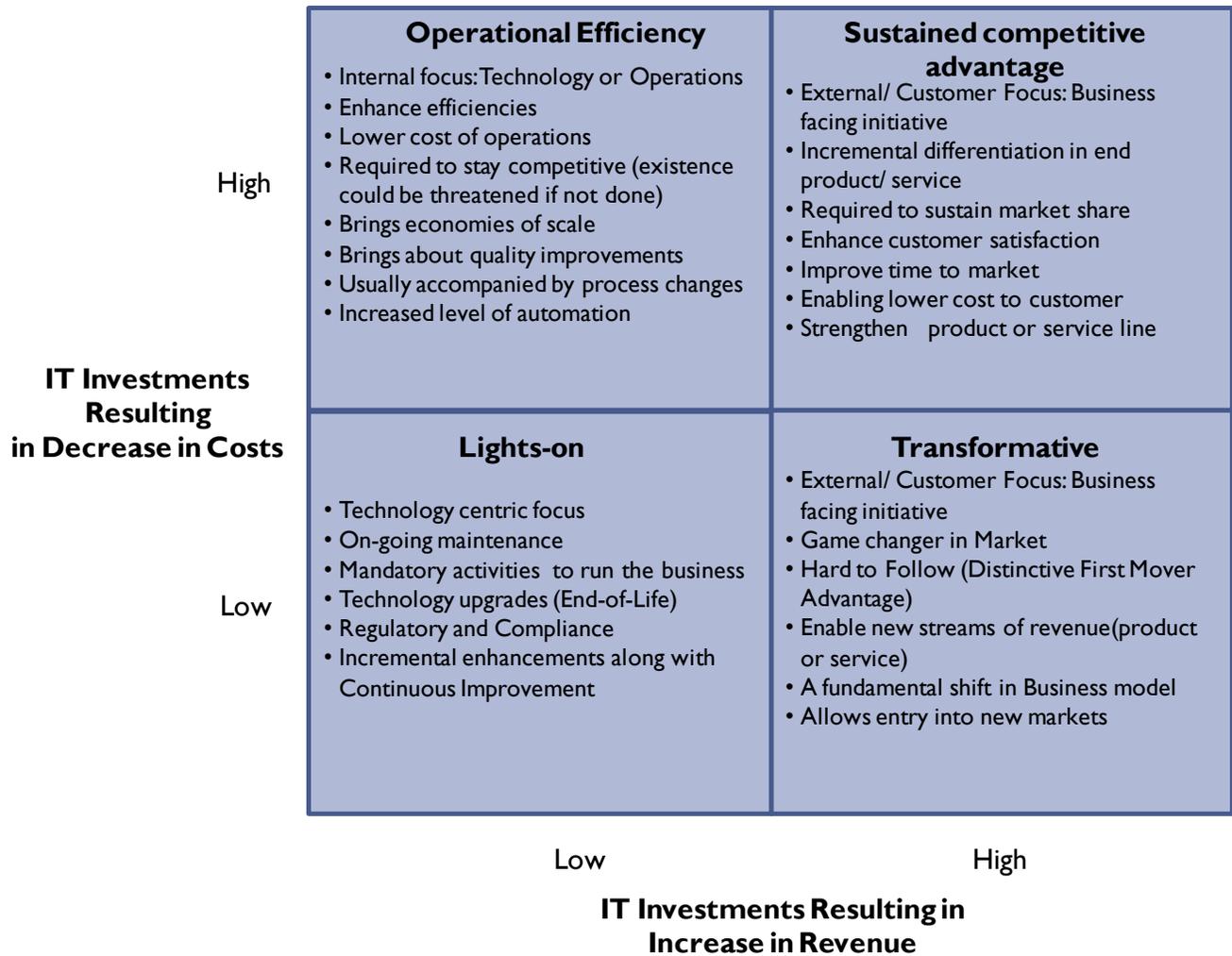


FIGURE 7 – IT INITIATIVE CATEGORIZATION GUIDELINES

Radhika: In the operational Efficiency Quadrant:

- change “Internal focus technology or operations” to “internal focus – on technology or operations”
- change “Enhance Efficiency” to “Enhanced Efficiency”
- change the line “(existence could be threatened if not done)” to “(existence could be in threat if not done)”

In the “Lights On” category:

- change “mandatory activities to run the business” to “Mandatory to run the business”
- change “Regulatory and Compliance” to “Regulatory and compliance requirement”
- change “Incremental enhancements along with continuous improvement” to “Incremental enhancements for continuous improvement”

In the quadrant “Sustained Competitive Advantage:

- change “External/Customer focus business facing initiative” to “External/Customer focused business initiative”
- change “Incremental differentiation in end product/service” to “Product/Service differentiation”
- remove “lower cost to customer”

In the quadrant “Transformative”:

- change “External/Customer focus business facing initiative” to “External/Customer focused business initiative”

Figure 8 below gives illustrations of various initiatives across the 4 categories.

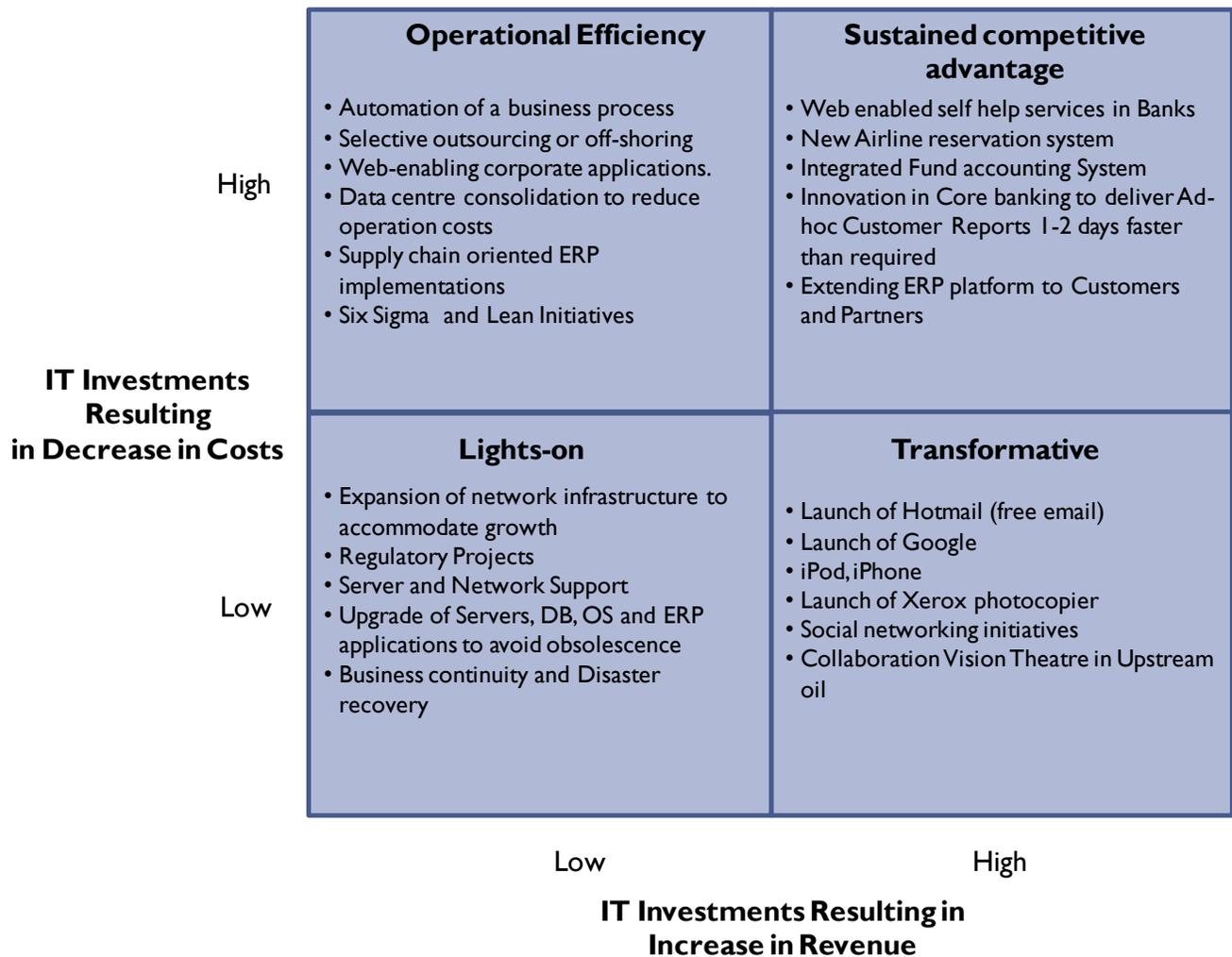


FIGURE 8 – IT INITIATIVE CATEGORIZATION – ILLUSTRATION WITH INITIATIVES

APPENDIX B – TOOL AND GUIDELINES FOR SME ERP IMPLEMENTATION

Table 5 provides the generalized repository of all business benefit line items.

	Unit	Before ERP	After ERP	Comments
Indirect Labour Cost Reduction				
Inputs				
Indirect labour involved in A/R follow-up and collection	FTE			
Benefits				
Cost reduction	INR/yr			
Inputs				
Indirect labour involved in data entry, preparation and reconciliation of invoices	FTE			
Benefits				
Cost reduction	INR/yr			
Inputs				
Inventory transactions / monitoring at godown	FTE			
Benefits				
Cost reduction	INR/yr			
Inputs				
Senior management time spent on mundane activities (e.g. daily sales data collation)	FTE			
Benefits				
Cost reduction	INR/yr			
Cost Reduction Due to Streamlined Raw Material Procurement				
Inputs				
Stockout due to late ordering of raw material (% of revenue)	%			
Benefits				
Avoidance of opportunity loss	INR/yr			
Cost Reduction Due to Shortening of Collection Cycle				
Inputs				
Days outstanding (DSO)	days			
A/R	INR			
Benefits				
Cost Reduction Due to Shortening of Collection Cycle	INR/yr			
Cost Reduction Due to Avoidance of early payment of A/P				
Inputs				
Payables period	days			
A/P	INR			
Benefits				
Cost Reduction Due to Avoidance of early payment of A/P	INR/yr			
Inventory & Carrying Cost Reduction				
Inputs				
Total Inventory Value at retail stores	INR			
Inventory value per store	INR			
Inventory Turnover Ratio	number			
Inventory Holding Period	days			
Inventory at godown	INR			
Benefits				
Reduction in carrying costs on inventory	INR/yr			
Increased Sales Due to new models (e.g. new repricing model)				
Inputs				
Additional revenue prior and after introduction of new models	INR/yr			
Benefits				
Increased profits based on additional revenue	INR/yr			
Increased Sales Due to Faster Time to Market of New products				
Inputs				
Time taken from production readiness to selling of new product (month)	# of months			
Average one month revenue from all new products introduced in a year	INR/yr			
Benefits				
Increased profits due to faster time to market of new products	INR/yr			
Total Benefits				
	INR/yr			

TABLE 5 – SME CROSS-INDUSTRY ERP – BENEFIT LINE ITEM REPOSITORY

The repository contains various benefit buckets including the following:

- Indirect labour cost reduction
- Cost reduction due to streamlined raw material procurement (due to better end product demand forecast)
- Cost reduction due to shortening of collection cycle
- Cost reduction due to just-in-time payment of Account Payables
- Inventory and carrying cost reduction
- Increased sales revenue due to various process changes (e.g. re-pricing models, faster time to market of new products etc.)

Of the above, all except the last are to do with operational excellence while “increased sales revenue” is achieved through improved competitive advantages.

The tool can be used as a starting point. More benefit line items can be added as the context demands.

APPENDIX C – TOOL AND GUIDELINES FOR SME MANUFACTURING PLANT OPERATIONS EFFECTIVENESS

Table 6 provides the generalized repository of all business benefit line items.

Pilot Machine				
Unit	Before Implementation	After Implementation	Comments	
Indirect Labour Cost Reduction				
Inputs				
Indirect labour involved in OEE data collation and report preparation	manhours / day			
Cost per FTE	INR / manhour			
Benefits				
Cost reduction	INR / day	0		
Increased Sales Due to Overcoming Capacity Constraint				
Inputs				
Average % of sales revenue for which the market demand is higher than rate of production	%			
Sales revenue	INR/yr	0		
Benefits				
Increased revenue	INR/yr	0		
Cost Reduction Due to Productivity Improvement				
Inputs				
Average total direct costs (Raw Material, Direct Labour, Machine hours etc.)	INR/day			
Average total number of pieces produced	number/day			
Process cost per piece (labor+overhead)	INR			
Benefits				
Cost Reduction Due to Productivity Improvement	INR/day	0		
Inventory & Carrying Cost Reduction				
Inputs				
Raw material and WIP inventory	INR			
COGS	INR			
Average inventory holding period	days			
Benefits				
Reduction in carrying costs on inventory	INR	0		
Cost Savings Due to Delay in CapEx Investment				
Inputs				
CapEx investment required for new machine to keep up with market demand	INR			
Delay in investment due to better OEE of machine	days			
Benefits				
Cost Savings Due to Delay in CapEx Investment	INR	0		
Total Benefits (from pilot machine)				
	INR/mc/yr	0		
Overall Benefits (from all machines)				
	INR/yr	Sum of benefits from each machine		

TABLE 6 – SME CROSS-INDUSTRY MFG PLANT OPS EFFECTIVENESS – BENEFIT LINE ITEM REPOSITORY

APPENDIX D – VALUE MEASUREMENT APPROACH - GUIDELINES

The approach to value measurement is best started during the quantification step itself. This would give ample time to set-up any additional processes or systems to collate data post implementation of the IT system. Some general guidelines to be considered are as under:

- For direct or indirect labour cost reduction (through reduced efforts or productivity improvement), time spent at activity level need to be captured. This can be achieved through simple timesheets or information systems.
- For cost reduction due to shortening of collection cycle, the company should be able to measure Days Outstanding (DSO) accurately. Typically, finance module in an ERP provides the capability for capturing DSO. The same holds good for Accounts Payable cycle time as well.
- For inventory and carrying cost reduction, the inputs to the ERP system need to be validated (through rigorous approval procedures) to ensure that the benefit measurements are accurate.
- Any increase in sale need to be ideally traced back to specific interventions like revamped pricing model, faster product introduction etc.. The measurement is tricky as there could be multiple causal factors for sales revenue increase.

APPENDIX E – COST LINE ITEM REPOSITORY

The attached excel has the comprehensive set of all cost components that need to be considered for an IT initiative. Not all may need to be used in a given context.



Cost Line Items - IT
Initiatives.xls