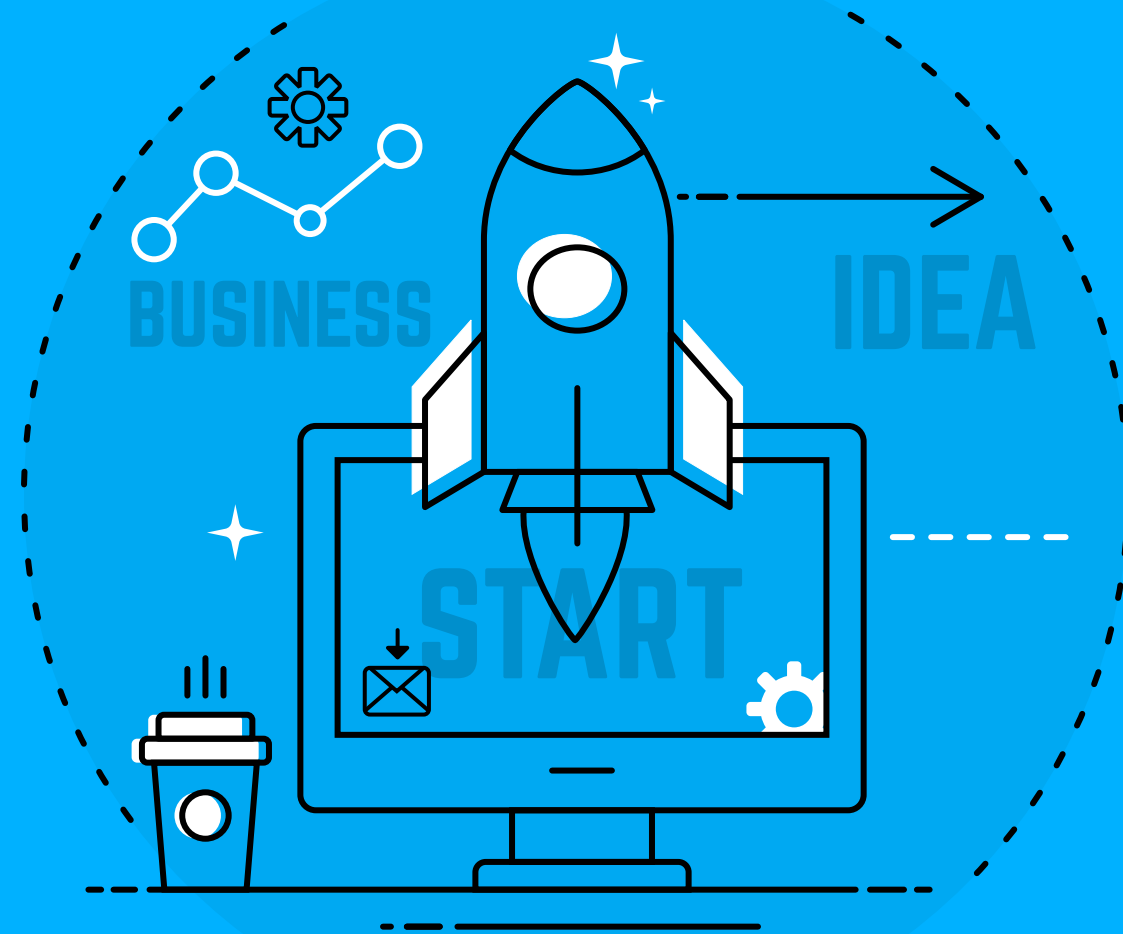


10 ANALYTICAL TECHNIQUES TO IMPROVE



BUSINESS PROCESSES

10 ANALYTICAL TECHNIQUES TO IMPROVE BUSINESS PROCESSES

FIRST EDITION

**A Complete Guide to Analysing Business
Processes for Business Improvement**

**By Bernadette Kropman
Co-Founder of primebpm.com**

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Dedication

To all my staff, students, customers and colleagues, past and present, thank you for your endless questions and contributions. Here's to you and your continued success!

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PREFACE

Welcome to the e-book - **10 Analytical Techniques to Improve Business Processes** and thank you for being part of my passion.

For over a decade, I have seen a common pattern, much effort is invested in mapping the current state of business processes. However, the analysis and improvement of processes are approached with much less effort. Worse still, I have encountered that documented current state processes are shelved and nothing more is done with them!

As an analyst myself, it comes as no surprise that I started

analyzing this pattern and why it is so.

My study spanned several years and many organizations - both national and international. Three main factors came to the surface:

- *Insufficient or incorrect information gathered in the current-state phase.*
- *Business process models not created at the right level.*
- *People tasked with analyzing the processes were not equipped with the right techniques.*

The purpose of this e-book is to address the latter point. Hence, this book is targeted at:

- *The Business Improvement Director, GM of Transformation or similar - the person who manages the improvement team and is accountable for the success of the improvement initiative.*
- *The improvement team member who is responsible for performing the analysis of business processes.*

This e-book can be used as a checklist to ensure that all improvement opportunities have been exhausted. Alternatively, use it as a reference guide for your next improvement initiative.

I truly hope this book strengthens your business process analysis capability and furthermore, that your efforts result in true business improvement.

INTRODUCTION

Have you ever noticed that many people document current state business processes but the steam runs out when it comes to the analysis and improvement phase? I have seen teams disintegrate at this stage.

The given reasons were varied, including resignation but one thing was constant, analysis and improvement were not undertaken with the same prowess as process mapping.

This is a concerning trend and experience has shown me that this is due to a combination of reasons.

The first is that the documenting of processes is one thing, but process analysis is somewhat more of a challenge. Hence, at times, the team who are mapping the processes may not have the analysis skills to really deliver value.

The second reason is that insufficient process data and information is gathered during the current state process mapping phase. Having limited process data and information limits the analysis that can be performed. I will address this reason in another e-book.

To address the first reason, I have compiled a number of process analysis techniques that will make the less wholesome Analyst a true star. In addition, if you have a team of analysts, no longer do you need to rely on their "inbuilt" analytical skills and see varying results across the team. Instead, use this e-book as a checklist to exhaust business process improvement opportunities.

ANALYSING PROCESS OUTCOMES



1. ELIMINATE AN OUTCOME

An outcome can be produced by an activity within a process or by the process itself once the process is finished. Hence identify these outputs and challenge if the output is required. An example of this is the old airline ticket, the ticket which had the carbon copy between it, it has been eliminated. Today, airline tickets have been eliminated. Instead, we hold an itinerary and receive a boarding pass upon online check in. Closely analyse your process for such an opportunity.

2. SUBSTITUTE AN OUTCOME

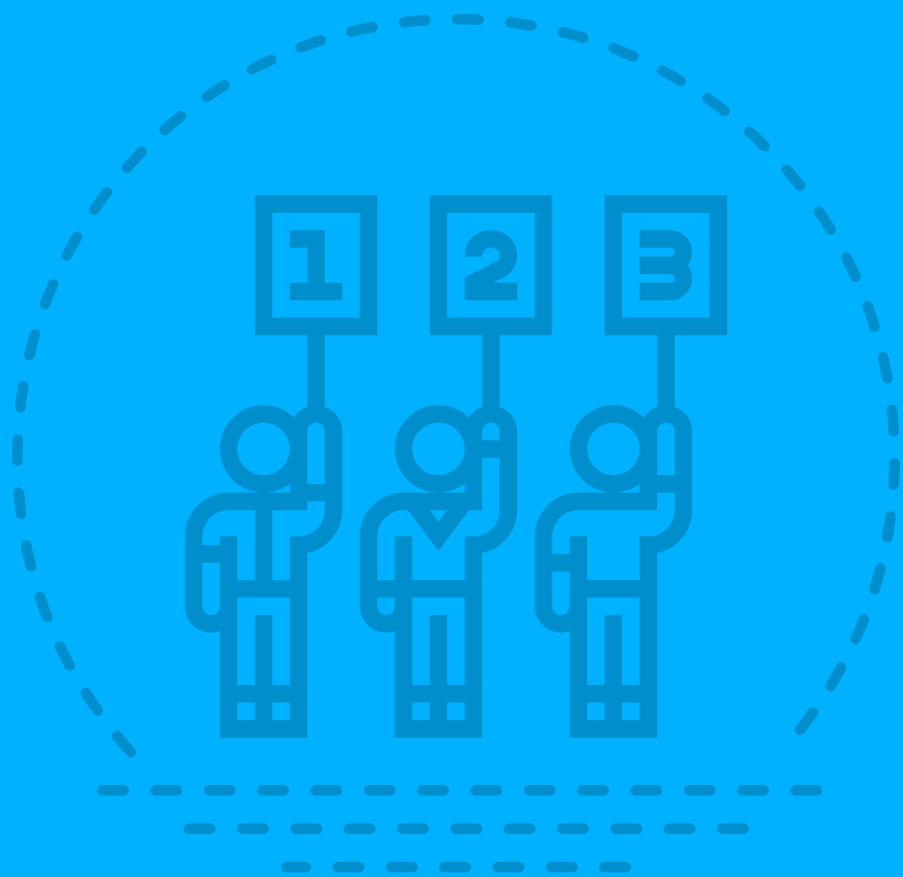
If an outcome cannot be eliminated, let us aim for the next best opportunity. Can it be substituted with something more effective or cost effective? For example, in today's information age, a number of reports are created and distributed. Investigate further if the recipient needs the complete report, maybe the report can be substituted with a summary report of the same information.

3. DIGITISATION OF AN OUTCOME

Digitisation is the scanning of analogue sources such as printed photos, taped videos, audio or real world objects (3D scanning) into computers for editing, storing and transmission. Does your process produce any of these items as an output? If so, consider digitisation as one of your improvement options.



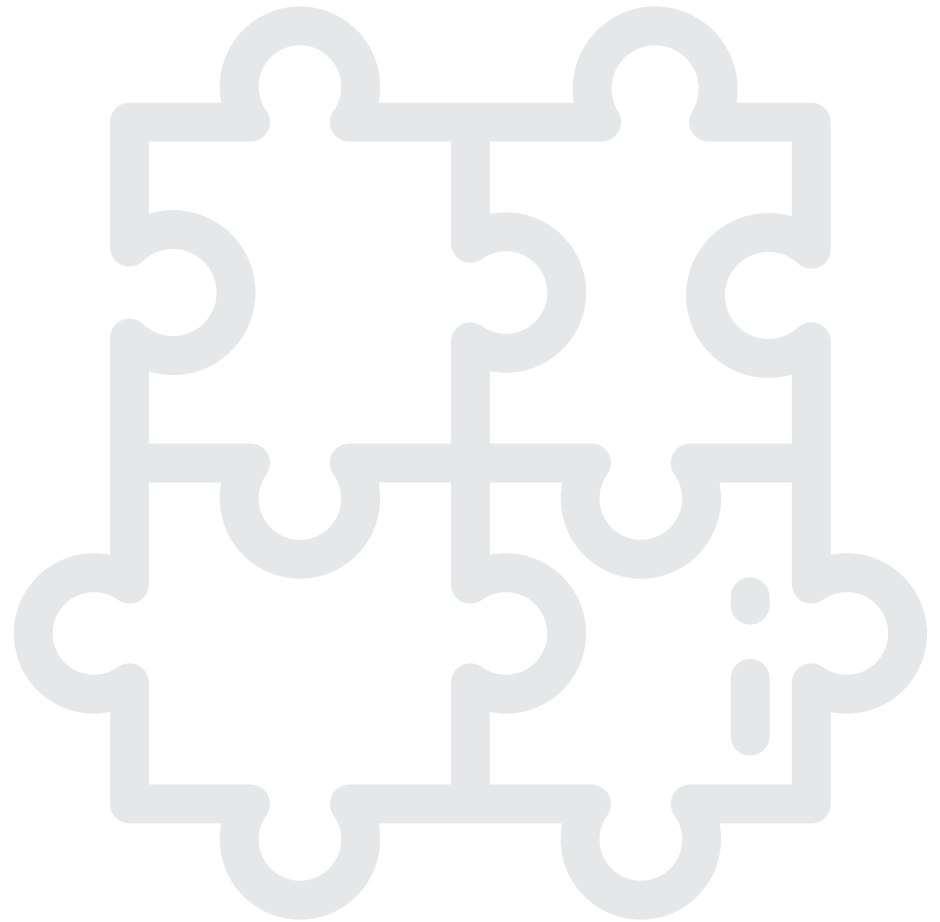
STANDARDISATION



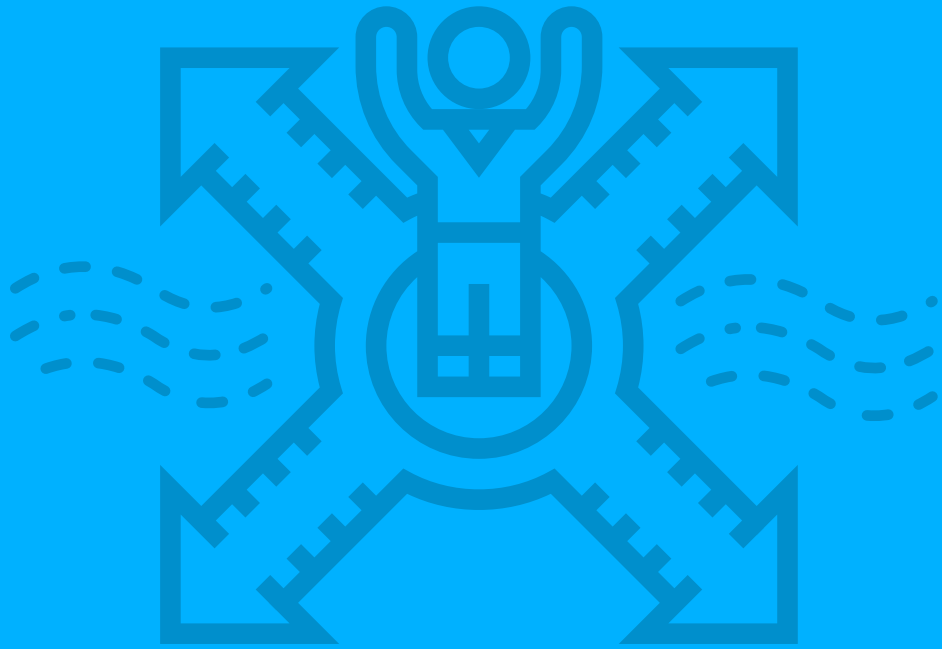
Standardisation refers to the process of making something conform to a standard. Standardisation is best explained by giving a recent experience as an example. Recently, I was on site at a government department, the department was comprised of 11 business units. Although the core business of each department was different, all departments reimbursed staff expenses up to \$100. However, almost all departments performed the process of reimbursement differently. For example, some accepted receipts and performed the reimbursement in person, others only accepted submissions via email. Another large variation was that some reimbursed in cash regardless of the original payment method, whilst others reimbursed only through payroll.

Standardisation of the expense reimbursement process achieved a number of benefits. These included a clear audit trail for all expenses, the ability to share staff for this administrative process between business units and remove confusion for all.

This example shows the opportunity of standardisation of processes across the organisation, however, standardisation can also be applied to documents or systems used within the process. Recent experiences have highlighted that in large organisations, sometimes different systems are being used for common processes. QuickBooks was used by one business unit whilst the other was using MYOB as their accounting system. No doubt that the two business units were performing as separate accounting entities, however, this could have easily been achieved by simply setting up the two entities as separate accounting entities in one system. This would enable job sharing and maybe a more competitive purchase on the annual software renewal!

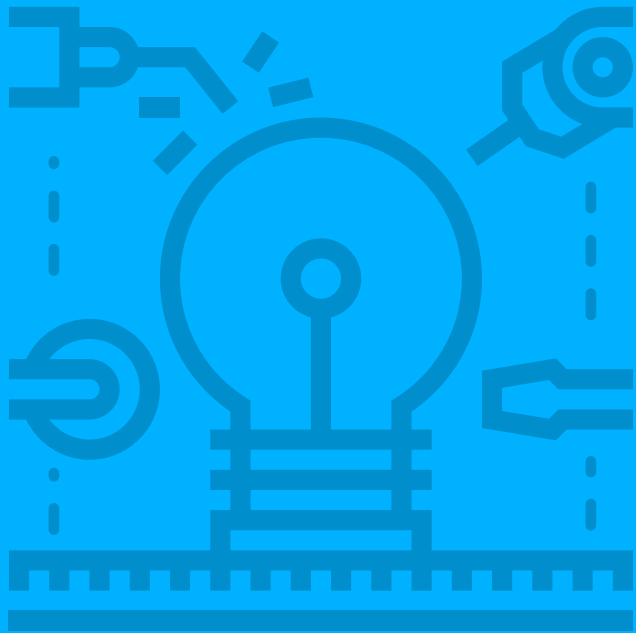


FLOW REDIRECTION



Ideally, the process model reads left to right and top to bottom. This design enables the Analyst to easily identify the handoff points between the roles acting within the process. Analyse these hand off points and assess if these handoff points are really required. The lesser the handoff points, the more efficient the process will execute. Are the handoff points going back and forth, that is, from one role to another and then back to the originator? In aid of efficiency gains, minimise the handoff points by possibly redirecting the flow of the process.

AUTOMATION OF ACTIVITIES



Automation is the transformation of business operations by replacing manual and paper-based processes with digital workflows. The digital workflow can either be human-centric or system centric.

Human-centric workflows automate the routing of activities between humans. For example, if a leave request is received by a team lead for one of the operational staff and the team lead does not approve/reject the request within a predefined time period, the leave request is automatically re-routed to the next person in line who has approval rights.

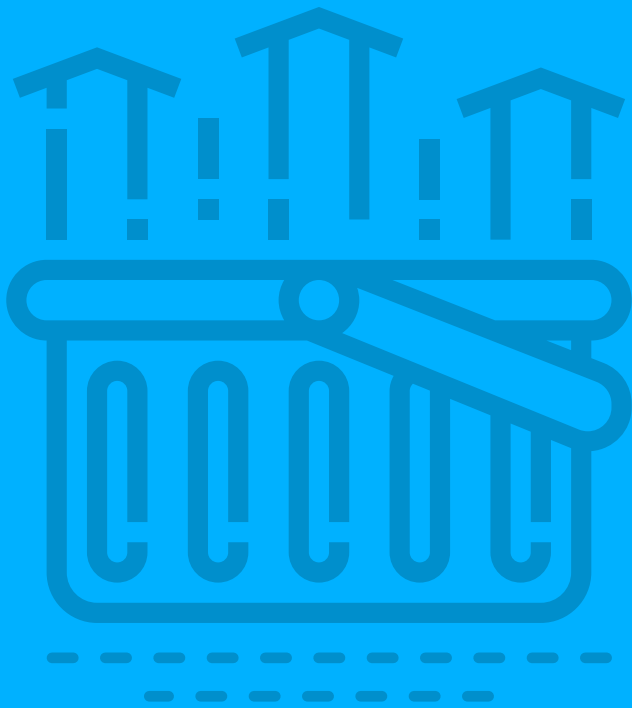
System-centric workflows automate the routing of activities between systems and humans and others systems. For example, a loan applicant submits the supporting documentation online; it is the system that performs the first assessment. That is, did the applicant submit all the required documents? If not, the system advises the applicant of this. If yes, the system forwards

the application with the supporting documents to the loan assessor for assessment.

Process automation is a real candidate for making large leaps in business improvement. However, the time and cost of implementation must be calculated to understand the true return on investment before implementing.



ASSIGNMENT OF RESOURCES



When a process is documented, it is easy to assess which resources are doing what tasks within the process. This presents the opportunity to reassign tasks if required. For example, in a recent Human Resource process review, it was found that the HR Director was shortlisting job applicants; she spent hours each week doing the first shortlist. By providing a few shortlisting criteria to a more junior HR position, the right resource can be assigned to the right tasks.

HARMONISATION



Previously, I introduced the opportunity of process standardisation between organisational business units or geographies. However, there are instances in relation to different geographies, where the processes can be standardised globally, however, not quite completely. That is, there are geography-specific nuances that stop us from fully standardising processes. For example, this nuance might be country specific legal or cultural differences. Hence, the processes may need to vary to some degree. This is referred to as process harmonisation.

ELIMINATE ACTIVITIES - VALUE ANALYSIS



Eliminating activities from a process must be done with some caution. The Analyst cannot simply hand pick activities to be removed without some rigor or analysis behind it.

Value Analysis is a technique and discipline which minimises process cost without diminishing product or service quality, reliability, performance and appearance.

In Value Analysis, each activity within a process is analysed and allocated to one of three categories. These categories are:

CUSTOMER VALUE ADDING (CVA)

CVA activities refer to activities within the process that are effective and directly contribute to satisfying the customer's expectations. Examples of these are answering a customer query via telephone or email. An easy way to identify these activities is to ask yourself the question: If I were to ring the customer and ask him/herto pay for this activity, would the customer do so? If no, then it is not a CVA activity, instead, try to classify this to either BVA or NVA.

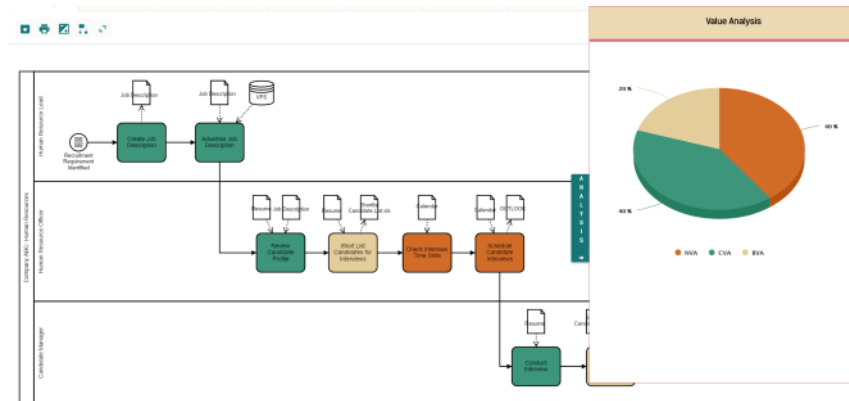
BUSINESS VALUE-ADDING (BVA)

BVA activities are activities that are essential for the business to function. This includes activities relating to policy, regulatory compliance, necessary approvals etc. These activities add cost to the process but do not add value from the customer's perspective. However, the business cannot function without these.

NON-VALUE-ADDING (NVA)

NVA activities neither add value to the process from the customer's perspective nor are the activities required to conduct business. NVA activities represent waste in the process and a potential for change. Examples of these are activities such as rework, unnecessary approvals and double entries.

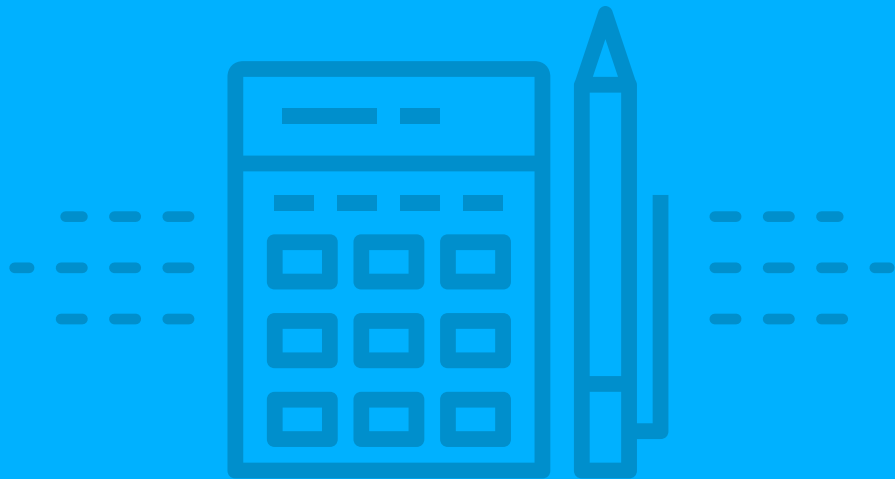
Once the Value Analysis is complete, the opportunity presents to eliminate the NVA activities from your process.



VALUE ANALYSIS

- Green** – Customer Value Adding activity (CVA)
- Taupe** – Business Value Adding activity (BVA)
- Orange** – Non-Value Adding activity (NVA)

ACTIVITY AND PROCESS COST ANALYSIS



Analysing the cost of a process is another way to identify cost reduction opportunities. What could be the cost saving if we were to slightly redesign the process?

To calculate process cost, there are two costs to consider:

- **Role cost**
- **Overhead cost**

A process model indicates which role performs what activity. Identify the role(s) and source the annual cost from the Human Resource department. For example, role XYZ has an annual cost of \$100,000.

Secondly, the business overhead cost must be calculated. An overhead or overhead expense refers to an ongoing expense related to operating a business. Overhead costs include rent, accounting fees, taxes, telephone bills etc. but does not include labour costs, material costs and direct expenses.

An overhead cost is usually expressed as a ratio and this can be sourced from the finance department. For example, the overhead rate is 0.31 or 31 percent, which means that \$0.31 in overhead costs is incurred for every \$1 in direct labour costs.

Hence, if role cost is \$100,000 per annum, the overhead cost is \$31,000 per annum.

Translate the overhead cost and the role cost into minutes. This can then be multiplied by the minutes it takes to do the activity. Hence, the result is a per activity cost.

Allocating a different role to an activity can significantly change the cost of the activity.

Following the Value Analysis described above, calculate the annual process execution cost of your process for:

- **Customer Value Adding activities**
- **Business Value Adding activities and**
- **Non-Value Adding activities**

Non-Value-Adding activities represent waste in the organization; hence these costs can be immediately removed to deliver cost savings.



ACTIVITY AND PROCESS TIME ANALYSIS



Another method of cost reduction is to analyse the time associated with doing an activity or a complete process.

There are two categories of time we must take note of:

1. Execution time per activity

That is the time required to complete a single activity in a process.

For example, recording customer data takes 2 minutes.

2. Delay time

This is the time lag associated with the task in a process. There are 2 delay types:

- a. A delay in a process due to the unavailability of a third party e.g. system or person not available.
- b. A delay in the process due to not prioritizing the activity
E.g. I received an order but I did not act upon it immediately.

There are two informative measurement opportunities. The first is the time per activity and the second is the time of the process.

The time measurement per activity leads to the calculation to answer the question of how much time are we spending on CVA, BVA or NVA activities. For example, the process has 3 NVA activities. NVA activity one = 2 minutes

NVA activity two = 1 minute

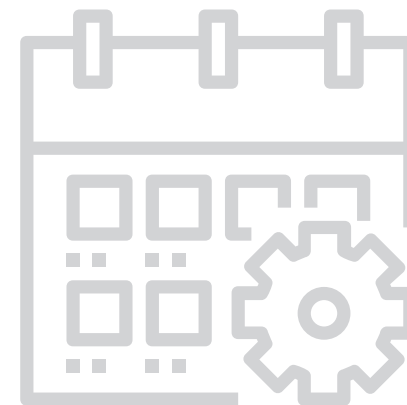
NVA activity three = 4 minutes

That means that in one process alone, 7 minutes of time is wasted.

The time measurement for the complete process is called Process Cycle Time. It is easily calculated by adding the time taken for all activities in the process + delay time.

Generally, process cycle time is expressed annually. To achieve this, the frequency of the process must be considered. For example, the process cycle time is 30 minutes and its frequency is twice per week. Hence, on an annual basis, the organisation is spending 52 hours on this process.

If 7 minutes of the 30 minutes, is dedicated to NVA activities, on an annual basis the organisation is wasting 728 minutes or over 12 hours on non-value adding activities!



EFFICIENCY



Process Efficiency, also known as Process Cycle Efficiency, signifies a level of performance that describes a process. In short, an efficient process uses the lowest amount of inputs to create the greatest amount of outputs.

Process Cycle Efficiency is a measurement, expressed as a number. This number represents the amount of value-adding time in a process. The higher the number, the more efficient the process becomes.

The Process Cycle efficiency is calculated by totalling the value adding activities (BVA & CVA) time in the process and then dividing it by the total Process Cycle Time of the process.

In other words, process cycle time = process execution time + delay time.

Process Cycle Efficiency is improved by decreasing the cycle time through the reduction of delay time. Let us look at a scenario:

- **Process Cycle time = 50 minutes**

- **Execution time = 10 minutes**

Hence, there is a delay time of 40 minutes in the process.

Divide Execution time by process cycle time. That is:
 $10/50 = .2$

To represent the decimal as a percentage, multiply it by 100. Therefore, the efficiency of this process is 20%.

Therefore, if we want the process to be 100% efficient, we need to remove the 40 minutes delay time.

As a reference, for transactional processes, that is anything non-manufacturing, 25% efficiency or above is acceptable.



Thank You So Much!

I hope you've enjoyed this e-book as much as I loved writing it for you.

I appreciate each and every one of you for taking time out of your day or evening to read this, and if you have an extra second, do join our blog via our website to receive the latest tips and techniques on how to improve your business processes. I also look forward to connecting with you on LinkedIn.

Thanks again and I wish you nothing less than success!

BERNADETTE KROPMAN

Checklist

Elimination of an outcome	✓
Substitution of an outcome	✓
Digitisation of an outcome	✓
Standardisation	✓
Flow Redirection	✓
Automation of activities	✓
Assignment of resources	✓
Harmonisation	✓
Eliminate Activities - Value Analysis	✓
Activity and Process Cost Analysis	✓
Activities and Process Time Analysis	✓
Efficiency	✓

TABLE 1 - BUSINESS PROCESS IMPROVEMENT CHECKLIST

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ABOUT THE AUTHOR



Bernadette Kropman is a Business and IT professional, Business Manager, BPM Coach, and Co-founder of a BPM Consultancy and software tool. She has 20 years of business experience, of which 15 years has been focused on the use of Business Process Management

to achieve continuous business improvement.

Masters educated at the Queensland University of Technology, Bernadette's career started out as a Business Process Analyst and she naturally climbed the ranks. With over 100 improvement initiatives under her belt in a variety of industries, she has lead and undertaken these with large corporates such as Vodafone, GE, BHP Billiton, AMP, Rolls-Royce and various local, state and federal government departments.

She is passionate about Business Process Management, continuous improvement and is the co-founder of **PRIME©** - an improvement methodology that incorporates, components of Lean, Six Sigma and BPM.

Recently she co-founded **PRIMEBPM©**, the cloud-based software tool. **PRIME©** is used in several government organizations and large corporates, enabling independent continuous business improvement.

Bernadette spends her time enabling others to undertake or perfect their business improvement aspirations. She is a driver of effective and efficient business operations and passionate about the application and implementation of IT in business.

Bernadette lives in Brisbane, Australia with her husband. Her hobbies include cooking, scuba diving, hiking and travel.

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