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Lean: Getting Early Wins from BPR Business Analysis Best Practices



James Proctor, Director of Professional Services,
The Inteq Group, Inc.

Author of Mastering Business Chaos

This In-Depth White Paper Includes:

- ✓ Lean concepts clearly explained
- ✓ Why apply Lean improvement concepts upfront?
- ✓ In-depth discussion of the 7 key sources of waste
- ✓ Customer Value Added (CVA) vs. Non Value Added (NVA) clearly defined
- ✓ The four questions that comprise value creation
- ✓ Achieving early wins with minimal time and budget
- ✓ Essential best practice tips in applying Lean
- ✓ Using Lean to improve enterprise agility
- ✓ Getting started with Lean

Overview

Moving forward with a Business Process Reengineering (BPR) initiative – from incremental Business Process improvement (BPI) to transformational BPR is a daunting prospect for most organizations. However, applying lean concepts upfront streamlines the initiative and results in early wins.

In my blog post [“The 5 Essential Business Analysis Questions”](#) I present five business questions that provide a framework for critical thinking and engaging stakeholders in a sophisticated business analysis conversation. The first and second questions are intuitive and are key to “getting lean” and producing tangible results quickly.

The first of the five questions is [“What are you currently doing?”](#) The focus of this question is on defining the as-is state of the organization’s business processes (work activities, procedures, workflows, etc.). The output of this question is a set of detailed as-is process maps.

This question is essential to BPR. In order to identify opportunities for improvement and to move forward with change - hands-on staff, management and other stakeholders need to visually see the process, via process maps, to clearly and objectively understand the current as-is state of processes. The first question provides the basis for asking the second question.

The second of the five questions is [“What are you currently doing that you \[your organization\] do not need to be doing?”](#) There are numerous work activities (business policies, procedure steps/tasks, business rules, etc.) in most organizations that consume resource time and effort but do not produce value from a customer or organizational perspective.

These work activities are classified as Non Value-Added (NVA). Identifying and eliminating NVA work activities (aka waste) is the essence of “Lean.” Identifying opportunities to “Lean” processes of waste is often overlooked in improvement initiatives. However, it’s the essential step after creating the as-is process map.

Failure to lean processes before moving forward with more aggressive BPI and BPR tactics perpetuates legacy business rules (procedures, policies, workflow sequence, etc.). However, leaning the process of waste results in significant improvement in effectiveness and efficiency very early in the improvement initiative – and is discussed in more detail on the next page.



Best Practice Tip:

Process mapping is iterative. Start out by creating what I call a “footprint” level process map.

A “footprint” level process map is a high level process map that depicts the core in-scope work activities in the process flow from end-to-end – at a high level.

Once you have agreement from the stakeholder that the footprint is reasonably correct then move forward with interactions of more detailed mapping until you reach the desired level of detail – which if you are improving or reengineering processes – should be very detailed.

Best Practice Tip:

Never ask the second question while defining / mapping the as-is state of the process (the first question).

In other words, do not try to challenge and improve processes while trying to understand processes.

It leads to very bad outcomes – both in the actual BPR decisions and outcomes and in your relationship with the subject matter experts. Seek first to understand before trying to improve!

Getting Lean Upfront

The thesis of this white paper is that it is essential to lean-out processes upfront before spending significant time and effort on aggressive process re-design and reengineering tactics and before investing in new information technology.

Intuitively, it does not make sense to spend time, talent and budget trying to improve something that does not need to be performed in the first place. However, I see it all the time -organizations expending resources trying to continually refine and improve things that do not add value and therefore do not need to be performed.

And it gets worse – organizations spend significant resources on identifying and specifying functional requirements and implementing solutions to automate work activities and procedures that the organization does not need to do in the first place – regardless of how well it can be performed via automation.

The key concept is to recognize that before applying various improvement techniques and / or applying information technology, first clean-up the existing process by getting it lean.

Getting Lean – Key Concepts

When I analyze a process map, in the first cut of my review I classify each activity in the process as Customer Value-Added, Organizational Value Added or Non Value-Added.

1

Customer Value-Added

(CVA) work activities are work activities (including procedure steps and supporting business policies) that add-value to the output / product from a customer (internal or external) perspective. A CVA activity creates / changes / produces a characteristic of a product or service aligned with customer needs and expectations.

Or, to look at it another way, if the work activity (including procedure steps and supporting business policies) is not performed or applied, the value of the output / product of the process is diminished from a customer perspective.

Best Practice Tip:

An activity can be classified as Customer Value Added but the value-add is less than the cost of performing the activity.

Accordingly, if the activity cannot be redesigned to contribute more value than the cost of producing the value, then there is a business class for eliminating the value added activity.

2 Organizational Value-Added

(OVA) work activities are work activities (including procedure steps and supporting business policies) that do not directly provide CVA, but the organization proactively chooses to perform these work activities for other reasons.

Two examples of OVA related work activities illustrate the concept:

- The work associated meeting regulatory requirements (in excess of customer requirements) imposed by a regulatory body in connection with a product or service and the additional work associated with compliance related monitoring and reporting is classified as OVA. Accordingly, the cost of regulatory compliance in excess of customer requirements must be absorbed by the organization.
- Internal rework of a defective part is another example of OVA. If an organization identifies a defect in a product and performs "rework" to bring the product up to required specifications rather than scrapping the product - the organization, not the customer, absorbs the cost of the rework. In other words, the organization decided that the cost of rework is less than the cost of scrapping the item. The cost of reworking the product rather than scrapping the product is OVA.

Lean, in its purest form, classifies OVA as Non Value-Added (NVA). However, in practice, I find that OVA is an important distinction. Regulatory requirements, process methods, etc. change over time. The OVA classification enables tracking and facilitates on-going review of OVA activities over time to identify opportunities to reclassify OVA as NVA – and eliminate activities reclassified as NVA.

3 Non Value-Added

(NVA) work activities are work activities (including procedure steps and supporting business policies) that do not provide CVA or OVA. The focus of this post is on the concept of Lean – eliminating and /or reducing NVA work.

NVA work activities are often legacy in nature ("We have been doing it this way since 1982"), or procedures resulting from in-the-moment overreaction to one-off exceptions ("We'll ensure that this never happens again.") or business policies put in place to comply with an internal or regulatory mandate - the mandate, however, is no longer applicable but the business policy and supporting procedures remain.

If the work activity is something that the organization does not need to do - if it doesn't add real value – don't waste time improving it – simply eliminate it! This is the very essence of the concept of "Getting Lean." All of the cost of NVA work must be absorbed by the organization. NVA work cannot be priced into the product or service because NVA work does not add value from a customer's perspective.

Best Practice Tip:

In my initial analysis of the detailed as-is process maps, in addition to the classification of CVA, OVA and NVA, I also have a fourth category labeled "Suspect" activities.

A suspect activity is a work activity (or supporting procedure step or business policy) that is not clearly CVA, OVA or NVA.

The classification of "Suspect" provides a placeholder for deeper analysis.

4 BPR and Lean – A Target Rich Environment

It's surprising how much resource management and staff time is consumed by Non Value-Added (NVA) work. I have seen studies that estimate that less than 20% of total resource time in non-manufacturing sector organizations is actually expended on work that directly adds customer value. The other 80% is expended on Organizational Value-Add (OVA) and Non Value-Add (NVA) waste.

80% provides a target rich environment for applying lean thinking. There is significant opportunity for improvement wins early in a BPR initiative - and with limited investment in time, talent and budget.

NVA waste was originally classified by Toyota into seven categories. Over the years the Toyota classifications evolved outside of Toyota in the concept of lean manufacturing. Lean concepts continued to evolve and are applicable in the service sector and other non-manufacturing segments.

Below is a summary of the seven core sources of NVA waste in organizations. These categories apply to both manufacturing and services related processes.

5 Internal Transport (NVA Transport)

Internal transport is the physical movement of goods or people within an organization. For example, the movement of file folders from the filing room to the claim adjuster's desk does not add value, but consumes time and budget. The work that the claim adjuster does with the information in the file, however, is value-added work.

Internal transport is NVA because the product is not being transformed in some way as a result of transport. Internal transport of physical work-in-process is however often necessary. The key is to minimize the internal transport of work-in-process via optimizing workflow layout and other techniques.

Note: External transport such as the shipment of goods to a customer is classified as CVA work.

6 Inventory (NVA Inventory)

Inventory is classified as raw material, work-in-process and finished goods. Inventory in any of these three forms is NVA because inventory is idle. Inventory is not being transformed while sitting idle (except of course wine, malt liquor, etc. aging in a barrel) but consumes time, budget (working capital) and space – and requires transport (see above) between activities throughout the process.

Like transport, the goal is not to eliminate inventory, but to minimize inventory. Excessive inventory build-up obfuscates (or highlights depending on your point of view) other process waste – particularly waiting and delays (see below). The more inventory build-up in a process indicates less continuous flow in the process.

Inventory build-up is often caused by unbalanced activities, lack of standardized procedures or inconsistent application of procedures, unbalanced workflows, loosely coupled work activities, large batch sizes and long changeover cycles.

Reducing inventory build-up, however, must also be balanced with external customer facing (CVA) impact such as being out of stock – which delays the customer in getting value from the product or service or requiring a customer to consider accepting substitute goods. Incorrect inventory is also an issue. It distorts and actual balances and often results in excessive buildup or out-of-stock conditions.

Note: The same concepts of NVA inventory apply to the allocation of professional and service provider time in the service sector.



7 Motion (NVA Motion)

Motion is movement of a person or mechanism (e.g. equipment, machine, etc.) in performing a work activity. The distinction between transport and motion is that transport is the movement of inventory, materials, etc. between work activities.

NVA motion is any movement of a person or mechanism in connection with performing a work activity that does not add value to a product or service. Excessive stretching, reaching, walking, etc. are examples of NVA motion.

At a more micro level, excessive navigation of screens, for example, to enter an order or setup a new customer is NVA motion. Searching a work area for physical files, searching for emails that are relevant to a task, looking for supplies to perform a task are examples of NVA motion.

NVA motion also includes duplication of effort such as re-entering data (that could be captured from the initial or original source), researching the same internal query or external customer question [note: responding to the customer question is CVA], poor / ambiguous communication (requiring additional clarification), etc.

At a macro level, work effort in connection with retaining a customer because of inadequate service (poor service, unfriendly service, etc.) is NVA motion. To be clear, the work is required and necessary to retain the customer, but the concept is that if the customer received the appropriate service in the first place, the work associated with retaining the customer would not be incurred.

NVA motion is caused by poor layout of a work area, disorganization of a work area, ambiguous (or lack of) work procedures, inconsistent application of procedures, inadequate methods and mechanisms (e.g. dated equipment), lack of operator / user / agent training, etc.

The concept of ergonomics - workplace and equipment design intended to maximize productivity by reducing operator fatigue and discomfort - is directly aligned with reducing NVA motion.

8 Waiting (NVA Waiting)

Significant idle time is often incurred in organizations by people and mechanisms (machines, equipment, etc.) waiting for people and /or mechanisms. The idle time incurred waiting, which could otherwise be utilized for value added work, is NVA waiting.

Two simple related examples illustrate the concept. When an aircraft is parked and idle (not being loaded, unloaded, refueled, etc. - although excessive loading and unloading time is considered NVA waiting) at the gate between flights is NVA wait time for the aircraft. The aircraft is idle and not producing revenue for the airline.

Passengers waiting at the gate to board a flight that is late in arriving is NVA wait time for the passengers.

Assuming a passenger arrived on time, the additional wait time for boarding due to a late arrival of the aircraft is NVA waiting.

The same concept applies to products and services moving through a process. Work in process inventory that sits idle waiting to be consumed by the next activity in the process is NVA waiting. Similarly, NVA waiting is incurred when a work station operator and their associated mechanisms sit idle waiting for the upstream activity to provide inputs.

Waiting for the cable guy to arrive to perform an install or repair is NVA waiting from a customer perspective. If the cable guy arrives on time but the customer is not at home, the time interval between the cable guy's arrival and the customer's arrival (or the cable guys departure because the customer does not arrive) is NVA waiting from the cable guy's perspective.

Best Practice Tip:

Transferring wait time to a customer (keeping a customer waiting) is the most egregious form of NVA waiting.

Organizations often do not take into account the value of a customer's time (particularly a customer's perception of the value of their time) in interacting with the organizations processes – until of course, the customer moves to a competitor.

There is significant opportunity for process improvement via elimination and / or reduction of NVA waiting. Think of the increase in company and customer value by enabling people in your organization to allocate more time to CVA activities – simply by eliminating and reducing NVA waiting!

Common sources of NVA waiting include poor (or lack of) synchronization between interdependent activities in a workflow, upstream bottlenecks in the workflow, mechanism downtime (non-scheduled) during a work activity, excessive change-over or set-up time between cycles of an activity, waiting on reviews, inspections, guidance or decisions during the cycle of an activity.

9

Overproduction (NVA Production)

The concept of overproduction (NVA production) is the production of a product (including work-in-process) before the product is required by the next activity or by the customer or in quantities greater than is required to fulfill input requirements of downstream activities.

NVA production results in excessive inventory of raw material (receiving more raw material than can be readily consumed), work-in-process inventory (buffer between activities) and finished goods inventory (inventory that cannot be immediately shipped to a customer).

A key problem with overproduction, however, is that resource time, mechanism time and working capital is tied-up in the overproduced quantities. Additionally, the overproduced quantities consume space and need to be managed (counting, re-transporting, etc.) – additional costs that must be absorbed by the organization because the work is NVA.

The bigger problem with NVA production, however, is that it obfuscates other NVA activities (Transport, Motion, Waiting, Over Processing and Defects) because it provides a buffer between activities and enables slack across the process.

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10 Over Processing (NVA Processing)

Business value is created by providing customer value in the most efficient manner. Customer value is defined in terms of effectiveness - and effectiveness is achieved by asking four questions.

The four questions are:

1. Who are my customers?
2. What are the products and services that I provide to my customers?
3. What do my customers want out of the product and services? (aka dimensions of effectiveness such as quality, fit, service, etc).
4. What are my customers willing to pay for these dimensions (aka service levels).

This concept is discussed in detail in my book *Mastering Business Chaos*.

NVA processing (over processing) is the application of work (procedural steps), materials, quality standards, customer service levels, etc. in excess of customer requirements (needs and expectations).

Over processing is often counter intuitive when people are first exposed to the concept. However a simple example illustrates the concept: An organization manufactures coffee mugs that are sold to large high-volume big-box retailers. The product design department, however, engineers the mugs based on specifications that apply to high-end boutique shops. The big box retailers do not require, and are not willing to pay, for the level of precision of a very smooth surface of the mug that is required for boutique shops.

To be clear, the big box retailers require a mug that is consistent with their customer's needs and expectations. Those needs and expectations however, are not the same as the customers of boutique shops. The gap between processing to achieve the requirements of boutique shops and the requirements of the big-box retailers is NVA processing.

Another, and far too common example of NVA processing in many organizations is excessive levels of reviews and approvals. Does the Purchase Order, Contract, Claim, etc. really need 5 levels of review and approval? Each level consumes process time and resource (approver) time. Does each additional level really add CVA or OVA?

NVA processing results from not having a clear understating of customer requirements. If customer requirements are not clearly defined in terms of the dimensions of effectiveness and if the standards



for the dimensions are not objectively defined, then the processes cannot be optimized to provide the products and services that meet the dimensions of effectiveness at the defined standards.

The goal is to create processes that produce products and services consistent with customer requirements. Ensure that standards, specifications and acceptance criteria are clear and are consistently applied across the activities comprising the process.

11 Defects

A defect is the production of a product (work-in-process and finished goods) or the provision of a service that is below the defined standards / specifications required by customer needs and expectations. Think of defects as the other side of NVA processing (see above). There is an expression regarding defects that “You can’t add value twice.” In other words, the cost of scrapping a product because of a defect, reworking a product to cure a defect, or re-performing a service because it was not performed correct the first time must be absorbed by the organization because a customer is not willing to pay for the defect, rework or re-performing the service.

Best Practice Tip:

As a general rule, rather than create elaborate rework activities or embed excessive control points and inspection in a process, its typically more effective and efficient to identify the root cause of the defects, fix the root causes and improve the yield rate (lower the defect rate) to a level that eliminates or reduces the need for inspections and rework.

Defects have both direct costs (e.g. labor incurred and material consumed in the production of the defective product or service) and indirect costs such as defect tracking and reporting, re-organization of schedules, interaction and damage control with customers, etc.

Defects typically result from inadequate, poorly designed or ambiguous work procedures, inconsistent application of procedures, skill shortages, misalignment of skills with work requirements, inadequate training, incapable vendors and excessive transport or motion.

Summary / Conclusion

Your organization’s business environment continues to change (customer requirements, competition, regulatory requirements, economic conditions, etc.) – and at an increasingly fast pace.

NVA work significantly impacts enterprise agility. Waste induces sluggishness in an organization’s business processes to adapt to changes in the business environment.

Lean processes, however, are agile and enable an organization and it’s supporting business processes to quickly respond and adapt to changes in the business environment.

The first business question is “What are you currently doing?” In order to identify waste, you first have to see it. This is a core value of the as-is process map. It enables stakeholders and subject matter experts to visually see waste in context.

Best Practice Tip:

Identifying opportunities to lean the process is essential. However, it’s not enough to simply identify the opportunities to lean the process. The role of a professional business analyst is to also build the case to stop doing the things that the organization does not need to do, ensure buy-in from the hands-on staff and then seek commitment for the change at the appropriate level of the organization reporting hierarchy.

Process maps provide the foundation for identifying waste. If you can identify waste via the process map, you have an excellent chance of identifying and analyzing root causes, identifying solutions and building a business case to eliminate or minimize waste.

The second business question is “What are you currently doing that you [the organization] do not need to be doing - and you would stop doing, if you could identify the waste and change the business policies, procedures, processes and/or supporting information technology that are the root cause of the waste.

If you ask these two questions, then you have the opportunity to identify waste, build a business case for eliminating or reducing waste, facilitating a decision to change the root cause and ultimately implementing the process changes that eliminates and/or reduces waste - which clearly is the end goal!

And, as an added bonus, any waste that is eliminated or reduced automatically results in a leaner more agile process.

The Next Step

It's a very complex, globally competitive, rapidly changing business environment. Ask yourself some critical questions. Are the business processes and supporting applications in your organization really keeping pace with ever increasing demands for organizational effectiveness and operational efficiency?

Does your team and your organization have the critical thinking skills and analysis techniques to rapidly identify, analyze and articulate essential business requirements? Are you able to rapidly define and specify your business requirements at the level of detail of functional requirements?

If you can, what are the benefits? If you can't, what are the risks?

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- Transforming a Hero Culture
- Lean: Getting Early Wins from BPR
- 10 Perilous Misconceptions of Censuring Current State Mapping & Analysis
- Crossing the Chasm from Business Chaos to Business Agility
- The Agile/Framework™ - Breaking the Myth of the Iron Triangle
- Customer Self-Service vs. Shifting Work – The Distinction is Critical
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- 👤 Contact: Eloise Rich
- 📞 Phone: 800.719.4627
- ✉️ erich@inteqgroup.com
- 🌐 www.inteqgroup.com