The nestle internal documents management essay

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The research process followed in this study is outlined in Figure 1, it began with a review of the literature related to BPM and BPIs with a particular focus on researches that tackled Innovation and particularly Packaging Innovation in Food Industry. The literature review revealed a significant gap with regard to both the integration aspect of BPM and BPIs and the application of this integrated framework in the specific field of Packaging Innovation which led to formulate the RQ.

In order to identify and describe the impact of the proposed framework on the Packaging Innovation Process a Case Study methodology has been adopted as a research strategy. This is because it is considered suitable to address the research question: How and why an integrated framework of Business Process Management and Business Process Improvement could improve the Performance of Packaging Innovation Process of a multinational company? This is also in accordance with Yin (2009, Loc 453) who confirms that “…’how’ and ‘ Why’ questions are more explanatory and likely to lead to the use of case studies….. as the preferred research method”. Furthermore, the focus on the contemporary events of Packaging Innovation Process in its

real-life context and not requiring the control of behavioural events were additional reasons for choosing the case study method (Yin, 1981; Yin 2009, Loc 310). All the 3 conditions highlighted by Yin (2009, Loc 310) are met in order to adopt the case study as the most appropriate method. Once again Yin (2009, Loc 310) argues clearly ” … case studies are the preferred method when ‘ how’ or ‘ why’ questions are being posed, the investigator has little control over events and focus is on a contemporary phenomenon within a real-life context.”

Case study design

An embedded single case study design has been selected in this research. According to Yin (2009, Loc 740) there are four major types of case study designs. Placed in a 2Ã-2 matrix these relevant designs are: single case versus multiple case designs, then holistic with a single unit of analysis against embedded covering a multiple units of analysis.

The aim for selecting an embedded single case design is to investigate a representative or typical case in order to “ capture the circumstances and conditions of an everyday or commonplace situation” (Yin, 2009, Loc 1205). Embedded designs (multiple units of analysis) “ often add significant opportunities for extensive analysis, enhancing the insights into the single case” (Yin, 2009, Loc 1215).

Accordingly, this embedded single case is about packaging innovation process improvement in the context Business Process Management and Improvement and specifically the integration of both BPM and BPI disciplines. This involves as well several units of analysis which consist in baseline

events and validation through an innovation project. In the baseline events one main illustrative project has been reviewed in order to understand the critical reasons that make a packaging innovation project fail. Then in order to assess the impact of a poorly designed packaging on the operation, twelve factories across Europe and Asia have been visited through a waste Audit methodology (Muda Hunt). The twelve factories have been chosen as subunits for this investigation because they were widely spread geographically across Europe and Asia and were using different packaging materials and technologies for various product categories.

With this case study design, the emphasis is global touching the packaging innovation process and not on individual factories or on a specific packaging material or a product category. Yin (2009) stresses that a major drawback in an embedded single case is focusing only on the subunit level for example the individual factories and failing to return to the larger unit of analysis in this case the packaging innovation process improvement.

On the other hand, a single case study has limitations in particular to its rigor of research and in relation to the scientific generalization of the findings and conclusions (Yin, 2009, Loc 554). Nevertheless, single case studies permit a precise analysis of “ cotemporary evidence in context” and are “ generalisable to theoretical propositions” (Yin 2009, Loc 573).

Finally the systematic adoption of embedded case study as a research methodology using three unit of analysis gives more rigor as well, Furthermore, the validation of the proposed framework though a real

packaging innovation project (Embedded unit of analysis # 3) enhances the quality output of the research and confirms its managerial implications.

Data collection

The data were primarily collected at Nestlé Head Office, R&D centres and affiliate markets and factories. Worldwide leader in Food and Wellbeing industries, Nestlé uses a wide range of more than 177’000 packaging materials and more than 66’000 different packaging specifications in 450 production sites across the globe.

Moreover, Nestlé is also interested in improving its Packaging Innovation Process and attracted by exploring the new integrated framework which combines both BPM and BPI. Therefore the access to Nestlé internal data and employees has been made relatively easy. Using Nestlé posed no research bias since it gives total independence and full autonomy to conduct the whole research in order to avoid any influence neither on the research process nor on the outcome.

Thus, Nestlé’s internal documents review and semi-structured interviews with a group of concerned employees have been used in this research to collect data. To complement the second-hand data, waste audits in twelve factories have been carried out combined with a visit and interviews of tree key suppliers. The use of multiple sources of evidence, combined with key informants who have reviewed draft case study reports, helped to establish construct validity (Yin, 2009, Loc 734, 1057). All data were stored in a process Map using the BPM software “ Nimbus Control” in accordance with Yin’s (2009, Loc 734, 1057) recommendations for establishing reliability.

Internal documents and interviews

Nestle internal documents were the first source of data collection for this investigation.

These include corporate documents (General Instructions, Policies, R&D and business reports, best practices library) produced by process owners, functional departments or experts. The process owners have mapped processes and issued instructions on how to implement and execute their processes. Having access to Nestlé’s internal documents and employees helped to rely on a vast amount of relevant data.

For the baseline review of a major Packaging Innovation project, semi-structured face-to-face interviews were carried out with 37 stakeholders and 3 key suppliers involved in the development process. An interview lasts between 2 to 4 hours, with a flexible schedule, according to availability of the individuals invited. The semi-structured questions were defined following a clear Process flow and Project Phases:

- Project Inception / Initiation

- Project Brief & Objectives

- Project Organisation Planning & Development

- Project Execution, Management, Reporting and Steering Committee

- Packaging Design / Specification & Quality

- Supplier Selection, Technical Qualification Approval & Performance

- Business Impact, Supply and Cost.

Interviewees received a clear description with scope and objectives of the review as well as relevant questions before the interview. Participants were invited to comment on any phase with regard to their own experiences and learning’s together with any recommendations they might have for improvement, as well as present copies of any relevant documentation that can support the review.

The principle aim of the review and Gemba walk was to capture the learning’s from all employees involved and who were encouraged to freely give any comments they might have related to the following questions:

What happened?

Why did it happen?

How, and at what stage of the design / development phase of the project, could we have avoided these failures?

How should we change our development / deployment approach as a result of these learning’s?

What went well?

What did not go so well?

What could have been improved?

What could have been done differently?

What Key Recommendations could you offer to improve the process in the future?

All comments and feedbacks were grouped into a series of “ transcribed Notes” following Miles and Huberman (1994) recommendation. The transcription is grouped by Function and Location with a summary of the inputs that were mapped in the BPM tool: “ Nimbus Control”. This allowed an easier analysis and quicker understanding of the whole picture and piece together the complex interfaces between all entities involved in the Packaging Development Project called 24K.

Field observations

To collect first-hand data field observations were made using waste audits (Muda Hunt) approach in 12 factories across Europe and Asia. The concept of MUDA hunt is meant to provide awareness to obvious waste as well as none Value Added activities at the shop floor. The application of the Lean Six Sigma tools such as DMAIC methodology will help afterwards to reduce or eliminate the identified waste.

Field observations in scope:

Packaging areas of main production lines;

Material flows in packaging areas;

Packaging materials waste;

Labour utilization, packaging material usage on the lines;

Space utilization on the floors, storage & inventory.

Field observations Out of scope:

Processing of raw materials;

Production lines (mixing, moulding, ...)

The relevant filling and packing lines were selected for Muda Hunt if they are strategic to the Business and depending on their capacity utilisation, their Efficiency and Performance as well as their material waste level.

All Mudas were mapped in a prioritisation matrix (see example below) depending on their impact High or Low and their effort to implement Easy or Hard. The proposals are then listed in tables as first priority in green colour and second priority in orange colour for actions planning.

Limitations of Lean programs

The origin of Lean goes back to the Toyota Production System which has been created more than 40 years ago. For R. Suri (Suri, 2010) a new ground cannot be forged by focusing only on refining and implementing 40-year-old approach. Based on studies with more than 200 companies during the last 15 years, he listed few limitations related to Lean. For Suri, Lean is designed originally for production system with relatively high-volumes. Organisations that are offering high variety or customised products could not see how to implement Lean principles.

According to Atkinson (Atkinson, 2010),” […] LEAN must grow with the culture and not be imposed upon it.” The author highlighted that too much

attention is focused on the technical aspect of Lean, rather than the ambition to build a real self-sustaining Lean culture. Atkinson has listed seven misconceptions regarding Lean; first, Lean is frequently considered as a “ toolbox” of techniques and methods that are pushed down to the organisation, rather than pulled and tailored to it. Second, Lean is not a cost reduction exercise to remove unnecessary cost out. Third, Lean concepts often are not applicable to processes and functions beyond operations. Forth, Lean often doesn’t impact the design and the innovation processes. Fifth, Lean is to frequently be sold, surrounded by all the exotic terminology, as Japanese approach for improvement. Sixth, Lean does not necessitate a culture of continuous improvement and finally Lean is less concerned by the culture change.

In his research of the top reasons for the failure of the major Lean initiatives, Lucey focused on the other dimensions as leadership, employee’s engagement and communication. Atkinson on the other hand highlighted the importance of the organisational culture that decides the success of Lean or any other improvement initiative and demonstrated that applying lean principles and tools is certainly not enough to achieve business excellence. For Treat, organisations practicing BPM may apply common Business Process Improvements (BPI) initiatives for certain improvement; nevertheless the usage of these BPI tools does not mean that the organisation is devoted to the effective application of BPM. In the same context, Hammer underlined in his process audit framework the crucial importance of applying two defined groups of characteristics that are necessary for business processes to continuously improve and sustain. These characteristics as described in the

first section of this research are based beside process management, on people Leadership, culture, knowledge skills and behaviours.

Hence it’s evidently crucial to compare BPM and BPI approaches not only according to the MEM but as well from the Management perspective looking at how these approaches tackled the issues of Leadership, Culture Change, Process Management, and Continuous Improvement.

Leadership Management:

This factor is related to the role of top leaders and their behaviour in driving the organization towards Performance and Continuous Improvement. This central role has been accepted by experts and researchers as one of the major success factors for reaching Business Performance.

Management in general is more concerned about controlling, problem fixing and making short term results and Leadership is more about the ability of giving directions, developing a vision and setting strategies to achieve this vision (Kotter, 1993, Kotter, 1996). In few words, leaders foster change and transformation in the organisation. Engaging leaders and top Mangers is the key first step for a successful implementation of Process Business Excellence.

Culture Change:

The ultimate Culture Change objective is to drive performance across the whole organisation in order to exceed customer expectations and therefore to win in the market place. A robust culture would promote effective performance only when it contains values and norms that helps to engage people, manage the change and the shifting to a competitive environment

(Atkinson, 2010; Kotter, 1993). Literature supports Kotter and states that this kind of culture will impact positively on the productivity and performance of the organisation. As an illustration, there is a clear parallel between people engagement and the sustainability of lean initiatives (Lucey et al., 2005). The research literature shows that engaged workforce can have a huge impact on growth, profitability and competitiveness (Lucey et al., 2005) therefore a measure and monitoring of this engagement is crucial for sustaining any continuous improvement process.

Process Management:

Businesses are driven by a multitude of various processes, but concentrating on the core and essential ones either in operation or beyond will improve the organisation' Performance. Core Processes have to be continually reviewed, measured and improved and employees should focus on defining the " perfect process", eliminating any unnecessary phases, challenging the lead times or the base costs. A Performing organisation is where processes are mapped, measured and improved for all core business activities.

The development of a new business process is also one of the key activities affecting Business Performance and competitive abilities.

The association between cause and effects, inputs and outputs of a process must be the guiding principles to applying BPI methodologies. Efforts and resources spent other than on managing processes and changing the culture to achieve strategic objectives is waste (Atkinson, 2010). Therefore getting the processes right first is a prerequisite for achieving Performance objectives.

Finally processes have to be visualised and communicated in a way that each employee can see and understands the process. Visual systems should allow everyone to have the capability to answer the question, if everything is flowing the way it should be and if we are on time to customer demand? BPM helps to create a current state map of an existing flow, then develop and implement a future state based on BPI principles.

Continuous Improvement (CI):

As mentioned in the introduction, organisations make efforts to implement Business Process Improvement programs to improve operational performance and achieve Business Excellence. Some of them try to move from episodic process improvements to building and sustaining their ability to improve processes continually. BPI methods help these organisations to understand and implement the concept of Continuous Improvement.

But according to Brad Power (Power, 2011), if an organisation tries to institutionalize continuous process improvement based on just one approach, it will run into trouble because no single method has all the elements for sustaining continuous process improvement. Therefore Power emphasises the fact that if organisations want to keep their processes up to date continually, they need to be able to use many approaches to embedding improvement in their management systems.

TQM started applying first the principle of Deming’s cycle Plan-do-check-act (PDCA) – to continuously improve the quality, achieve customer satisfaction and reduce costs. While Six Sigma supporters claim that if you train enough

people (belts..) and you measure performance, you achieve the cultural transformation toward continuous improvement.

According to Hammer, advises organisations to continually assess their processes against his model of process maturity (Hammer, 2007). He advised to put in place the governance and the infrastructure to track end-to-end process performance and finally install the right culture of process centricity and continuous improvement. On the other hand Lean approach aims to cascade strategic objectives into implications for process improvements to have people aligned behind the same direction. To ensure continuous improvement attitude Lean philosophy trust executives to act as coaches, helping people at the front-line to understand the importance of waste elimination and problem-solving.

Power underline that the few companies who succeed in sustaining their process improvement have actually selected and used the best from each of BPM and BPI approaches to embed continuous improvement in their organisation.

This fact supports further the need of streamlining BPM and BPI approaches and extract the essence of each methodology hence the relevance of this research.

Combining BPM and BPI approaches

Mandatory elements of a method (MEM)

Before digging further into the integration of BPI and BPM approaches, it’s relevant to describe the MEM elements used by Zellner to evaluate the

methodological degree of BPI approaches. In order to have continuity and the same benchmark system the MEM five mandatory elements (Zellner, 2011) has been used as well in this research. First element is the Procedure model that consists of defining the order of activities to be completed when deploying the approach. Second element refers to the Technique which supports an activity to generate specific results. Third element is the Results as such which the output produced by an activity. The element number four is defining the Roles of who is carrying out and responsible of an activity. Finally the fifth element is the so-called “ Information Model” which involves the above-mentioned components and their interactions.

According to Zellner a good systematic approach should embody all MEM at the best. By explaining how the MEM can support the act of improving a business process, Zellner underlines the need of a structure model that can define clearly hat to do step by step, which activity has to be performed and by who and which result is expected in an improvement project. The only thing that without referring explicitly to BPM, Zellner was describing the fundamental elements of BPM: Defining and mapping step by step the process, affecting to each activity a role and responsibility or more precisely a RACI matrix (who is Responsible and Accountable and who has to be consulted or informed). Then the inputs, outputs and instruction are defined. Finally the process map will be the “ Information Model” described by Zellner to describe the relationship with all elements and represent the results.

The following table summarises the main factors identi¬)ed from literature search based mainly on the findings of Zellner regarding BPI approaches taken and adapted in table # 1 and then completing these findings by

integrating Lean, Six Sigma and BPM. The aim of this comparative study is to have a systematic and holistic approach to develop the mentioned integrated model with relevant constructs that will answer therefore research question RQ2.

Lean and Six Sigma vs. BPM

Lean and Six Sigma principles are now being applied to business processes. From one side Lean philosophy and Six Sigma techniques address performance improvement by reducing wastes and process variability while BPM provides the platform to implement this performance and to sustain it on an on-going basis across the whole organisation.

With ERP system, most companies find it very difficult to implement Lean programs. This is because ERP systems have been focused around transactions and not processes (Nayak, 2007). Automated business processes are a complex set of system transactions requiring human and machine interfaces that make the changes difficult and time consuming. In this context BPM is an enabler for driving business process improvement in Lean and Six Sigma (Nayak, 2007). BPM tools provide the capability for monitoring, documenting, improving processes therefore are imperative for fulfilling the objectives of Lean principles. The following table benchmarks the key characteristics between BPM, Lean and Six Sigma.

BPI & BPM in Innovation

Before concluding this literature review section and preparing the next chapter of the cross-case study on Innovation process, it is essential to

review the literature regarding how BPI and BPM tackled specifically the innovation issue.

Literature shows actually that BPI initiatives were focused mainly on operations where link to product, customers or consumers is obvious. The interest of operation management lay in production, material handling and wastes, cost efficiencies, planning, etc. and all activities related to things and logic but less with people, behaviours and interfaces. BPI beyond the operations is therefore quite novel and organisations have great opportunity for improving as well non-operational processes such as R&D, HR, Finance or other Support and Management processes.

With BPI and BPM, organisations have great opportunity for improving processes beyond operations. Much of waste in processes beyond operations is viewed as minor in nature and therefore ignored. Despite the impressive results that BPI techniques can achieve at operational level, many organisations failed to grasp its potential benefit for their processes beyond operations such as in R&D, Management or Support processes. The difference between manufacturing and other areas beyond operations is that the employees introduce intrinsically variability into their activities. Therefore the challenges become quite different from those occurred in manufacturing environment. Conventional approaches to reduce waste: In order to eliminate or reduce wastes from processes beyond operations, companies can take the four typical actions, the first action is to reduce processing failures and activities that don’t add any value to the customer; then to eliminate superfluous and inconsistent controls. The third action is to speed up the processes by decreasing lead times and complexity and final

action is to ensure a constant effort on detecting perfections that customers really want.

Innovation process is one of the core processes which are key facture for insuring sustainable growth and Profit. This process will be considered in this research in next Chapter of a cross-case Study. From the literature review and the research conducted by IBM Institute for Business Value in 2006 looked at number of companies that used BPI approaches as Lean-Six Sigma to improve performance and succeed broad-based innovations. Researchers from IBM identified four distinguishing elements of approaches that set some organisation apart from those keeping a traditional operational improvement mind-set. These characteristics are first having an innovation vision based on accurate customer and market insights, then a committed Leadership to permanent innovation; third having an alignment across the whole company and finally setting up organizational capabilities that made innovation a routine way of working.

Gartner stated in 2010 regarding Innovation Process that a “[…] successful innovation needs a disciplined management to transform novel ideas into business value and Innovation management requires a clear strategy, a business focus and a defined process model”. According to Gartner, generation of revenue will increase and operational effectiveness will also improve if Companies succeed to manage properly their innovation programs.

Design for Six Sigma (DFSS):

Through DMAIC methodology organizations were able to make great improvements in reducing number of defects and therefore quality costs. However the quality level of Five Sigma (233 defects per million opportunities) is hard to exceed. The only way to improve further and achieve the ultimate level of Six Sigma is to redesign completely the process, product or service using Design for Six Sigma (DFSS) methodology (Antony 2002). According to Antony DFSS is a powerful approach to designing products, services and processes in a cost effective way to meet customer expectations.

The aim of DFSS is not to substitute the NPDI (New Product Development and Introduction) process but to make it more robust, cost effective and capable to achieve high performance in meeting customer expectations (Antony 2002).

Antony listed several benefits that could be gained by adopting DFSS:

- Reduced time to market for new products development or renovations

- Reduced products life cycle costs

- Better understanding of Customers’ needs and expectations

- Reduced number of design changes and hence prototypes

- Enhanced quality and reliability

- Improved ability to manage risks in designing products services or processes…

Methodology and tools of DFSS

The methodological process of DFSS starts with Customers' needs as an input and ends with high quality products, services or robust processes as an output. One popular DFSS methodology is the DMADV. It remains the number of characters and stages, and the general feeling the same as in the DMAIC acronym. The five phases of DMADV are defined as follows: Define the project goals and customer requirements (internal and external), Measure and determine customer needs and specifications, Analyze the process options to meet customer needs. Design the process to achieve customer needs. Verify the design performance and ability to meet customer needs.

Another methodology of DFSS named IDOV is a known design approach especially in the manufacturing sector. The abbreviation is defined as IDOV: Identify customer needs and specifications (CTQs), Design to translate the customer CTQ's into functional requirements and alternative solutions. A selection process selects the list of solutions to the " best" solution, Optimize uses advanced statistical tools to predict and model the performance or calculate and optimize the design or performance and Validate to confirm means and ensure that the design which is developed reaches the customer CTQ's.

Lean product development

LPD or Lean Design as the name indicates, draws on ideas from Lean Production as described above in chapter " Background of Business Process Improvement" which condensed Lean thinking into five principles: specify

value, identify the value stream, make the value flow, create pull in the process and pursue perfection. Although lean production can be described at various levels, Shah et al. (2008) argue that the dominant view “ rests on a set of practices and tools used in eliminating waste.” They also present the four main features of lean production as being quality management, pull production, preventive maintenance and human resource management. In the early stages of lean thinking, the focus was on the area of production. An exception, although not using the LPD label, is Kennard (1991), who uses six characteristics to summarise the Japanese approach to product development processes: information-intense, continual learning, constant customer contact, phases overlap, adaptability and speed/accuracy in execution. Another early describer of Japanese product development efforts is Funk (1993), who emphasised multifunctional problem-solving, close relationship with customers and suppliers, incremental improvement and learning.

Karlsson and Ahlstrom (1996) specified later on the applicability of the Lean principles in product development by defining LPD as follows: “ Lean product development comprises numerous interrelated techniques, including supplier involvement, cross-functional teams, concurrent engineering, integration of various functional aspects of each project, the use of a heavyweight team structure, and strategic management of each development project.”

Another aspect associated with LPD is that the leaner way of working will eventually speed up the development process. However, as advocated by Crawford (1992) accelerated product development is associated with risks such as trivial innovations driving out break-through innovations and mistakes happening when skipping steps that did provide necessary

information. Finally, Yang and Cai (2009) point out that LPD does not directly support the issues of quality, reliability and robustness in the product design.

Combining BPM, DFSS and LPD

The main potential seen in merging BPM, DFSS and LPD is to achieve improvements in quality by reducing unwanted variation (as advocated in DFSS), while at the same time being able to increase flow and speed in the development processes (as focused in BPM and LPD) (Chang and Su, 2007; Jugulum and Samuel, 2008). As summarised by Yang and Cai (2009, p. 97) " DFSS improves product value and product quality, whereas LPD improves product development lead time, efficiency, flexibility and product development cost." BPM will provide the right platform to map, enhance and manage the whole process.

One challenge pointed out by Jugulum and Samuel (2008) is the differences in implementation of Six Sigma initiatives and lean. The latter being broad in focus (looking at end-to-end processes and launching improvement events therein) while Six Sigma works with in-depth projects focusing on a small improvement area within a process. To some extent the integrated approaches proposed appear to be rather standard DFSS approaches with the addition of LPD tools. In contrast, authors like Karlsson and Ahlstrom (1996), Haque and James-Moore (2004) and Morgan and Liker (2006) emphasise the importance of viewing LPD as a system rather than as a set of tools, which impacts working methods throughout the organisation, such as seeking supplier involvement and cross-functional integration.

BPM, LPD and DFSS have different focuses, such as improvement, innov