An Activity Based Framework for Business Process Evaluation: Case Study of a County’s Evaluation of an Integrated Court System

Robyn L. Raschke, Ph.D., CPA
University of Nevada Las Vegas
Department of Accounting
robyn.raschke@unlv.edu

Robert L. Bradford, CPIM
Cajana, Inc.
rbradford@cajana.com

Sagnika Sen, Ph.D.
Pennsylvania State University
School of Graduate Professional Studies
sus45@psu.edu

Kristin M. Howlett, PMP
CH2M Hill
Kristin.Howlett@CH2M.com

Abstract
Organizations often need to invest in a variety of Information Technology (IT) projects to improve their business processes. Traditional methods of investment justification largely depend on qualitative judgment and lack in their capability to provide a quantifiable assessment prior to project initiation. In this article, based on Activity Based Management (ABM), we propose a standardized process improvement framework. The proposed framework enables quantitative assessment of the impact of different activities on performance. Based on the assessment, process improvement initiatives can be undertaken to reduce the impact of specific Non-Value-Added activities on performance measures. Pre and post implementation evaluation of such measures can be used to gauge process improvement. We elaborate the framework using a case study in a southern United States county where the different departments in its judicial system needed an integrated IT solution to track its cases as it progresses through the justice system.

1. Introduction

Billions of taxpayer dollars are spent on IT projects from the federal to local levels. At the federal level, the GAO estimates $71 billion will be spent on IT in 2009 [1]. IT spending at the state and local levels is expected to grow to $77 billion by 2012 [2]. The public-sector (Federal, State, County, and Cities) is one of the largest procurers of IT resources in the world [3]. With spending in the public-sector comes a concern of accountability and openness. In fact, funding for IT projects is becoming more difficult unless public administrators make a convincing business case [4]. This is primarily due to the lack of evidence or a standard method to derive results both prior to and post implementation [5]. Indeed, the importance of this issue is not reserved only for government entities, but remains equally important at the corporate level as well [6]. Therefore the objectives of this paper are to:

- Propose a standardized process improvement methodology adapted from Activity Based Management (ABM) for pre-evaluation and post project implementation;
- Evaluate its usefulness through case study; and
- Identify research opportunities related to the value impact of this process driven methodology.

Evaluation of IT projects generally fall within two categories: ex-ante evaluation and ex-post evaluation [7]. Ex-ante evaluation is primarily concerned with the pre-implementation phase of an IT project. Within each of these categories, evaluation is either financial or qualitative [8]. From a financial perspective, recent research suggests that these measures fall short on evaluating IT projects because they fail to evaluate the qualitative benefits as well as identify intangible risks associated with the potential failure of the project [6]. Similarly, qualitative evaluations fall short because of the lack of quantification. Examples of qualitative measures are increased satisfaction, better information, etc. Such measures are perception based, and do not provide any objective measures as to the outcome of a process. We propose a process-oriented framework for evaluating IT projects at the pre-evaluation and post implementation phases that are adapted from
Activity Based Management (ABM).

Applying an ABM approach identifies activities using a process perspective that the IT project is expected to impact. Each activity is evaluated with identifiable performance measures and quantifiable output. Cost driver analysis is then used to allocate all sources of cost to the specific activities. These activity costs are broken down into two categories - value added (VA) and non-value-added (NVA). Value added activities are those that contribute directly to the desired process outcome, while Non-Value Added activities are defined as ones that contribute to little or no value to the desired outcome. Projects are evaluated based on how well the NVA activities can be mitigated. In the context of an IT project, the assessment of NVA that are IT and non-IT related are utilized to assess the project at the pre-evaluation and post implementation phases. This process provides a standardized methodology of quantifying the financial impact of an IT project. This study examines the efforts of a large county within the southern United States that implemented this framework for the pre-evaluation phase of an IT project to integrate the court system and its related departments for their case management process.

2. IT Project Evaluation Methods

A variety of qualitative and quantitative methods are frequently used to evaluate IT projects. While qualitative evaluation methods identify project characteristics, they cannot easily quantify them [9]. Most qualitative methods focus on intangible benefits, and classify them into two main areas: internal improvement and customer related [10]. Internal improvement is concerned with lowering production (process costs) or increasing output whereas customer related is concerned with customer service and user satisfaction [11]. Such broad level categorizations are often insufficient to provide objective guidelines towards process improvement and the evaluation of the related IT projects.

Several financial evaluation methods provide quantitative assessment. Examples include: cost benefit analysis (CBA), Return on Investment (ROI), net present value (NPV), discounted cash flow (DCF), and payback period method (PBP).1 CBA is a popular method in which the benefits of the project outweigh the costs. The CBA approach attempts to place a monetary value on each element contributing to the cost or benefit of the project [12]. Although widely used and easy to understand, a drawback to the CBA method is that estimates are used to place dollar values on costs and benefits and these are often inadequate [13].

Subsequent financial evaluation often follows CBA such as NPV, DCF, ROI and payback method. NPV uses a discount rate to calculate the present value of all cash inflows and outflows from the IT project. One major drawback of NPV is determining an appropriate discount rate to apply to the IT projects [11, 14]. Related to the NPV is calculating the Internal Rate of Return (IRR) which assesses a minimum threshold to invest in the project. DCF is a method that attempts to provide the present worth of the future cash flows of a project. Again, this may become difficult if management assumptions are incomplete. Finally, the payback period (PBP) method looks at the earliest period that the costs of the project are recovered [11]. As with the other financial measures, a main weakness in the payback period method is that it may not consider qualitative benefits. An extensive review of these financial measures is provided in Nagm and Kautz [6], Table 1 summarizes the strengths and weaknesses of these financial evaluation methods.

Table 1. Strengths and weaknesses of financial evaluation methods (source: [6]).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Description</th>
<th>ROI</th>
<th>CBA</th>
<th>NPV</th>
<th>DCF</th>
<th>PBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to Understand</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Highlights monetary gains</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Clear “Value” Proposition</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross-compare projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weaknesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to include intangible benefits</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inability to handle strategic IS projects</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult to calculate discount rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does not deal well with uncertainty</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 It must be mentioned that these are standard financial methods that are applied to IT project evaluation.
To summarize, recent research on IT project evaluation suggests that the approach is “singly focused” and stresses the need for a different approach and a need to examine evaluation methods in practice [6]. Recent research suggests a more holistic approach to evaluating IT projects using a process management approach [15, 16]. ABM incorporates the traditional Activity Based Costing (ABC) with process analysis for evaluation. ABC assumes cost drivers are associated with an event or task that consumes resources [17]. Resources consumed are generally labor and materials. ABM incorporates the concepts of ABC to create a means to identify activities that add costs. These costs are either value added or non-value added costs. Kim [15] applied an ABM framework to ERP implementations in which system costs (hardware and software), consulting and training, as well as maintenance costs are allocated towards ‘cost drivers’. An example of a cost driver used in Kim’s [15] framework is the number of accounts associated with order fulfillment. Our approach, however, goes one step further in understanding ‘cost drivers’ as contributing value added and non-value added activities. We utilize the cost driver analysis within the business process to quantify the dollar value of activities. In addition, this information is also used to provide an assessment of the anticipated impact on project performance and can identify areas for improvement. Section 4.1 describes the steps taken towards allocating ‘cost drivers’ as it relates to the case management process in our study.


Information Technology has long been established as an essential resource for modern day organizations. At a minimum, IT is required for supporting day-to-day activities. Most organizations employ IT for more than just infrastructural support. Organizations use IT as a tool for competitive advantage to attain higher levels of efficiency and productivity; gather customer information, evaluate strategic decisions etc. As such, capital investment in large scale information technology projects has become a frequent endeavor.

Empirical results on the business value of IT, however, have shown mixed results. Among the reasons cited for such discrepancy [18] are various measurement factors such as timing, method of measurement, and unit of analysis. While this stream of research has mainly looked at firm performance as the dependent variable, some researchers argue that process-oriented models of value creation are more appropriate [19]. The primary argument against using firm performance is that it is a highly aggregated dependent variable, and is thus unable to provide insights regarding the performance of specific business processes. A firm’s level of maturity may vary across different processes. In order to assess the impact of an IT system, it is thus more logical to evaluate the performance of the business process that is directly impacted by the proposed system. For example, to evaluate the effectiveness of a new CRM (Customer Relationship Management) – it is imperative that pre and post installation values of customer related variables such as customer retention, cost of service per customer, etc. are compared. Linking profitability (as a measure of firm performance) to the CRM system is not advisable since myriad factors other than customer relationship management may affect a firm’s profitability.

In this regard, Activity Based Management (ABM) provides a unique methodology for evaluating large scale IT investments. ABM is a process analysis framework that enables breaking down a business process by activity, assessing related cost drivers and resources [15]. The process view of ABM looks at three constructs: cost drivers, activities and performance measures [20]. Cost drivers are the factors that determine the workload and effort required to perform an activity [20]. For example, lack of supporting technology might require additional resources (additional employees or additional time) to manually complete an activity. As such, this methodology provides an excellent tool for providing a quantitative assessment of the impact of the various activities required to perform a business process on its performance. More importantly, this information is available prior to the system implementation as opposed to the traditional financial measures such as actual return on investment (ROI), which provide information only after the system implementation. Also, traditional ROI analysis does not provide any prescriptions as to how to improve a process, while ABM can identify the impact of specific activities on performance measures. The performance measures are used in identifying potential areas for improvement. Pre and post implementation measures of performance data can be further utilized as a measure of process improvement.

In this paper, our primary focus is on the Non-Value-Added (NVA) Activities in ABM. NVA are defined as those activities that generate a zero or negative return on the investment of resources and usually can be eliminated without impairing a process. Some common examples of NVA might
include – lack of supporting technology, disconnected technology, lack of training, cultural issues, etc.

*Lack of Supporting Technology* – Business functions are executed using highly manual and paper-based processes leading to excessive time resources for creation and rework of critical outputs.

*Siloed/Disconnected Technology* – Individual process steps have been automated with “point solutions” such as small databases and spreadsheets. However, these custom applications are not integrated, and the data for interrelated activities cannot be passed between people or departments easily.

*Lack of Training* – Employees have not been given sufficient training to either execute their own job or to be cross-trained to perform other functions. Thus, when key employees are sick or on vacation, work within the department slows significantly.

*Cultural Issues* – Employees are not empowered to make critical line-level decisions. Activities often proceed very slowly, as many levels of bureaucracy are needed to make minor decisions.

We identify the Non-Value Added activities as the sources of risk in a business process. “Risk is an inherent property of every business process and techniques are needed to identify, represent, and analyse business process risks” [21]. The NVAs are identified as risks because they create a barrier to achieving the desired performance goal. Identifying the major NVA cost drivers with respect to a specific process thus enables early warning regarding the areas that need improvement.

### 3.1. Risk Categorization

An ABM based framework to evaluate IT project effectiveness thus entails a thorough understanding of risks associated with business process. In general, the term risk is defined as the degree of uncertainty and its potential impact and is measured by the probability of loss or gain multiplied by its respective magnitude [22]. Risk is also defined as the likely variance of future returns from a given project [23]. Total corporate risk is the sum of the political, economic, ecological, social, and technical risks to which the project is exposed, and can be broadly categorized into people risks, management risks and technical risks [23, 24]. While risks may originate either from within or outside an organization, external risks are not relevant in our context since our focus is specifically on activities that are performed within the organization with quantifiable costs associated with it. For our purposes then, we classify risks in two broad categories – organizational and technological. Table 2 provides detailed classification of the risk categories and examples pertaining to our context.

**Table 2. Risk classification.**

<table>
<thead>
<tr>
<th>Organizational Risk</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Strategic Risk | • Accountability [25, 26]  
• Goals and Objectives [26, 27]  
• Process Owner/Succession Plan [25]  
• Organizational flexibility/agility [22, 25] |
| Resource | • Financial [22]  
• Human resources [28] |
| Training | • Innovation and Learning [25, 27]  
• Lack of Training [25] |
| Standardized Policies and procedures | • Performance Measure [29-31]  
• Process Definition [32, 33] |
| Knowledge Management | • Information Management [26, 27, 29, 30, 32, 33]  
• Communication/Information Sharing [26, 28, 32, 33] |
| Culture | • Fear/Resistance of Change [26]  
• Collaboration/Territorial issues [28]  
• Service Orientation [26-28] |

<table>
<thead>
<tr>
<th>Technological Risk</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Technological Silo | • Disparate systems/lack of interoperability [34, 35]  
• Flexible Technology [27] |
| IT resource/capability[25, 28, 36] | • Inappropriate IT [26]  
• Underutilized IT/Limited IT Resource [26]  
• Managerial IT Knowledge [28, 35] |
3.2. Proposed Framework

In order to evaluate the value of an IT project using a business process perspective, an understanding of the term ‘business process’ is necessary. ‘Business processes’ are actions that firms engage in to accomplish some business purpose or objective. Thus, business processes can be thought of as the routines or activities that a firm develops in order to get something done [37, 38]. A business process can be further decomposed into three main components – Activities, Resources and Information Flow [24].

Activities are facilitated by data and resources to convert a set of inputs to a desired set of outputs, whereas flow of information controls the relationships between the activities of a process. The performance measures capture how well the business objectives are met. Cost, performance, and reliability form a triad for measuring process improvement [23], and should be measured before and after system implementation.

As shown in Figure 1, the conceptual model depicts the different dimensions of a process. A process’s outcome is reflected in and measured by the different performance measures (e.g. cost, efficiency, time etc.). Non-Value Added Activities (NVA) hinder the realization of the objectives of a business process.

![Figure 1. Conceptual model of process evaluation.](image)

NVA may affect one or more process dimensions (e.g. disparate IT infrastructure may hinder the flow of information as well as put a strain on resources). Through the use of ABM, the NVA risk categories that have the highest impact on the business process can be identified.

4. Case Study: Integrated Judicial System

We present our case study to demonstrate how our proposed framework is applied in aiding the vendor selection process in a county located in the Southern United States. The county was experiencing duplication of efforts between the various departments within the court system. The inability to electronically transfer records among the departments required manual and redundant efforts. For example, one department maintained a pool of employees for the specific purpose of retyping information when another department transferred the case file. This was creating a tremendous amount of wasted human resources that could potentially be redeployed to focus more on their core business functions. Realizing the need to share information between their various court and law enforcement branches, the county determined that all departments needed to integrate their disparate information systems and software applications. The county has eleven different court and law enforcement departments: Clerk of courts, District Attorney, Indigent Defense, Juvenile Court, Magistrate Court, Pre-Trial Services, Solicitor Office, Superior Court, Sheriff’s Office, Probate Court, and Drug/DUI court.

The county’s objective was to streamline the case management process beginning from the initiation of a case up to its trial. Representatives from each of the eleven departments formed a committee to oversee the vendor selection and project implementation. From the commencement of the committee, all departments agreed that one vendor solution would be selected and implemented throughout all departments to avoid any issues of integrating applications between different vendors. The consensus was that selecting one vendor to integrate systems between all of the departments would keep costs down and be simpler to implement, manage, and maintain. Prior to their efforts to approach the vendor selection process utilizing our evaluation framework, the county had narrowed down their field of viable vendor candidates to three, but failed in their RFP attempt to select one vendor for this project. Specifically, various committee members assembled into three different encampments supporting their ‘favorite’ vendor, creating an impasse. Although each encampment attempted to
persuade the others, no final decision was made. Implementing three different systems would defeat the purpose of their objective and ultimately cost everyone additional time and money to integrate with each other. Recognizing this, the county decided that they needed to make a decision using a methodology that was quantitative in nature and not based on qualitative reasoning.

4.1. Looking at the Court Integrated System through the ABM Lens

An ABM based methodology was adopted to resolve the conflict among the three groups to determine an appropriate single-vendor solution. The ABM methodology focused on two main aspects. First, to identify the non-value-added (NVA) activities associated with processing a case for trial. Second, to evaluate each vendor’s solution according to the impact of mitigated NVA. This was achieved in the following three steps. The first step in the process involved identifying the processes and their owners associated with the trial system. Processes were then broken down to activities according to the standardized process definitions provided at the state level by the Georgia Courts Automation Commission. This commission is a public-private partnership “to facilitate automated information sharing through the establishment of standards and information exchange processes” (http://www.gcacommission.org/). An extensive set of documents define the steps involved in each type of case (e.g., traffic violation, DUI) as it goes from initiation to trial. These set of documents were used to identify the processes and the associated activities.

The second step required allocating costs to the activities. This was done through a facilitated analysis of department activities to document costs, employee surveys to document their time allocations, and perceived issues as to which activities are value-added vs. non-value-added. The process of cost allocation required a combination of three methods: Salary trace, Headcount trace, and Direct trace. Salary trace method allocates costs to an activity as a weighted average of the salaries of the persons required to perform the activity. Headcount trace allocates costs of certain items (e.g. stationary) to a process according to the number of people associated with the process. Finally, direct trace method allocates costs that are directly related to an activity (e.g. maintenance payment for a printer used to print pay-checks). Figure 2 illustrates how the budget line items were allocated to the activities in one department. The third and final step in the process is to identify which activities are costing the department the most. Some of the NVA categories are described in greater detail below.

![Figure 2. Cost allocation procedure.](image_url)
mountains of files on their desks, and often backed up disposition of cases for months.

As seen in Figures 3 and 4, a large amount of NVA was determined. Figure 3 is a pie chart that depicts the proportion of the relative break-down of the NVA to VA cost-drivers after the initial step. Figure 4 shows further breakdown of the cost drivers associated with NVA activities.

![Breakout of Activity Costs](image)

**Figure 3.** Ratio of VA to NVA costs within one department.

![Annual Cost of NVA Categories](image)

**Figure 4.** NVA costs per ‘cost driver’ for one department.

Even though this process is well known and deeply studied (i.e. criminal justice), the amount of NVA does not mean manual processes are bad processes. It does mean that NVA uncovers inefficiencies related to a gap between current practice and theoretical best practice. So, an organization can be operating at 100% efficiency within the confines of their manual process and compare nicely with peers that are also very archaic in their activity execution. However, when compared to similar activities in other industries, or to theoretical improvements brought on by best practices, a large NVA opportunity emerges.

Since the chief aim is to reduce the cost of the non-value-added activities, discussions were held with the department leaders and employees, both from the business and technology side, as to the relative impact that the NVA could realistically be reduced through the implementation of an integrated system. Subsequent detailed discussions then addressed the specific net impact that a particular vendor solution would have on the reduction of non-value added activities. The basic flaw in most RFP’s is that all functional line items are treated with equal value. Vendors and their solutions are usually scored on the number of requirements they meet and/or the degree to which they meet them. However, in reality, not all requirements should be valued equally by the buyer. Meaning requirements that more directly mitigate large pools of NVA within the most pervasive and expensive activities should outweigh requirements that have little or no impact on efficiency. By introducing ABM and its subsequent NVA calculations into the procurement cycle, line items get weighted in proportion to the cost savings they have the potential to impact. As a result, the vendor that presents the best does not always have the best impact on the bottom line. Based upon the quantitative application of the ABM framework for evaluating the three vendors, a clear ‘winner’ emerged and the committee was able to unanimously agree upon one vendor solution.

5. Discussion

As a result of this standardized approach towards quantitatively assessing the potential net NVA impact of a proposed system, our case study suggests several success factors that are integral to our proposed framework. Firstly, our proposed framework that is grounded in ABM provides a quantitative basis for making process improvement decisions. In many situations, as is true in our study, qualitative reasoning towards an IT project created a power struggle that lead to impasse. Although, the county leaders recognized that rationally one solution would be best, that rationality quickly deteriorated. In many situations, decisions made as a result of a power struggle may not always be the best solution for the organization. By removing the qualitative argument
and focusing on a standard quantitative methodology, political and territorial issues are minimized as it relates to the project.

Secondly, our framework is applicable for ex-ante evaluation. The tremendous advantage to government and enterprise alike is that potential value is quantitatively assessed and can therefore be compared to the cost of the project upfront. This is especially true, as in our case, for large scale system implementation projects that require an upfront capital investment. With the age of responsibility calling upon our civic leaders to become accountable for taxpayer’s dollars, a standardized approach is necessary to validate the value proposition of an intended project.

Thirdly, this framework can be used to evaluate process improvement projects. Process improvement is an iterative effort. Evaluating process improvement both ex-ante and ex-post can provide managers with a systematic method for understanding cost-drivers, both organizational and technological, associated with non-value-added activities. As discussed earlier, non-value-added activities are those that do not contribute to the outcome of the process. Because of this, NVA can be utilized to identify areas of improvement in the process. An evaluation of process improvement areas utilizing our framework may determine that the largest driver of NVA cost is organizational (e.g. more training is needed due to employee turnover) and not require a technological solution.

6. Limitations and Future Research

Our case study is exploratory in nature and we must recognize limitations associated with it. In addition, our case study is related to one county with eleven departments limiting the generalizability of our conclusions. In addition, no propositions or hypotheses were tested. Further empirical research is necessary to develop testable hypotheses to improve the generalizability of the results. A benefit of case study research is that it allows for insights into areas of minimal research [39]. Although ABM methodology has been applied in different contexts, the contribution of this study is that our framework extends beyond a traditional ABM approach by assessing the anticipated impact that the cost-drivers will have on the performance of the process and identify areas of improvement.

In addition, areas for future research are needed to empirically test our proposed model. For example, further research is needed to understand the strength of the relationship between NVA risk factors and specific process performance measures. Once the relationship between these risk drivers and performance measures are empirically tested, future research can determine if specific NVA risks have a greater effect on process performance than others. For example, does organizational NVA risk have a greater effect on process performance than technological NVA risk? Our case study also illuminates the need to examine the value proposition of the RFP process. In general, the standard contract language in RFP’s considers that all functional line items are treated equally. However, in reality, not all requirements should be valued equally by the buyer.

Requirements that more directly influence large pools of NVA within the most pervasive and expensive activities are at a higher priority than those that have little or no impact on efficiency. For example, NVA calculations for a procurement cycle RFP can weigh the line items in proportion to the cost savings and potential impact. As a result, the vendor that presents the best demonstrations may not always be the best from a bottom line perspective. However, further research should examine how incorporating value expectations (e.g. reduction of NVA) in the contract language of the RFP can improve communication and clarify responsibility between the contracting parties.

In conclusion, this paper proposed a standardized process improvement framework that enables quantitative assessment of the impact of different activities on process performance. Based on the assessment, process improvement initiatives can be undertaken to reduce the impact of specific Non-Value-Added activities on performance measures. The feasibility of our framework is explored in a case study in the evaluation of an integrated solution for the various departments within the county’s court system. The paper contributes to the IT project evaluation and process improvement literature and provides additional ideas for research in this area.

7. References


practice and future trends in integrated management,”

[31] GAO, "Executive Guide: Measuring Performance and
Demonstrating Results of Information Technology
1998.

[32] E. K. Clemons, M. E. Thatcher, and M. C. Row,
"Identifying sources of reengineering failures: A study of
the behavioral factors contributing to reengineering risks,”
Journal of Management Information Systems, vol. 12, p. 9,
1995.

[33] V. Grover, "From business reengineering to business
process change management: A longitudinal study of trends
and practices,” IEEE Transactions on Engineering

[34] J. N. Hoover, "Data Silos,” in Information Week

[35] G. Ray, "Information systems and competitive
advantage: A process-oriented theory,” United States --
Ohio: The Ohio State University, 2000.

IT knowledge and media selection on operational
performance of small firms,” Small Business Economics,

Theory Of Economic Change // Review,” The Canadian

[38] M. E. Porter, "Towards a Dynamic Theory of
12, p. 95, 1991.

[39] R. K. Yin, Case Study Research: Design and Methods,
2002.