

Laurea University of Applied Sciences  
Leppävaara

**Developing and testing a prototype tool to track and measure Co-  
creation activity**

Michael Chezek

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During the 21<sup>st</sup> century, the shift from traditional business models that focus on value in exchange to those models that focus on value in use has been gaining in popularity among businesses worldwide. Globalization, networking, customer access to information and increasing variety of customer choices are factors accredited for this paradigm shift. Since the turn of the century, large corporations have invested resources into developing and innovating co-creation business models. Smaller firms with less capital are now starting to recognize the benefits of this approach and are taking advantage of readily available literature on the subject and attending seminars in order to keep pace with the phenomenon's rate of growth. One challenge that exists for firms, along with implementing a new business model concept, is finding a way to measure the effectiveness of their co-creation approach.

The purpose of this thesis is to develop a prototype tool to assist a firm on tracking and measuring the success of its co-creation approach. The idea is that this prototype is one that can be developed into a tool that can be published in the co-creation manual that the CoCo (From Co-production to Co-creation) project led by Krista Keränen is designing in cooperation with business consultant Chris Evatt and TEKES (The Finnish Funding Agency for Innovation and Technology). The concept of the tool is to measure the success of co-creation efforts through the accomplishment of goals that are based on a firm's strategy.

The objective is to get companies to take a holistic view their co-creation efforts, link goals to their strategy supporting drivers, recognize barriers and identify co-

creation partners from value networks. Knowledge of the co-creation phenomenon is essential to begin measurement, but it is difficult for an academic, start-up business or a firm that has its culture based on traditional transaction strategy to determine what level of knowledge exists or is required in a firm. This prototype tool will be presented in a workshop to a group of business leaders at a two day co-creation seminar held at Laurea University of Applied Sciences' Leppävaara unit on 22 May 2012.

The theoretical background of this thesis concentrates on business metrics, business measurement frameworks and co-creation themes in accordance with those published by the CoCo project manager and scientific leader. Definitions of some business terms are different according to authors of researched literature and choices had to be made as to what definitions for those particular terms would be used in this thesis. Causal relationships between components of the tool were established based on the theory which supports each respective component.

Action research using qualitative methods was conducted for this thesis. Data was collected from comments solicited after presentations that were given to focus groups and a case company. A structured questionnaire was not used due to the fact that it was already known that co-creation efforts had to be measured. It was more a case of trial and error with a proposed tracking and measuring tool that had been determined to be the best method for obtaining the required comments and feedback that would facilitate developing the prototype tool.

The outcome of the research is the design of a worksheet referred to as the COAM (Co-creation Approach Measurement) tool which has eight components, is based on company strategy, can be used at different levels of management and has been submitted to a case company for testing.

Key words: metrics, co-creation, goals, objectives, drivers, frameworks

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## 1 Introduction

Laurea University of Applied Sciences is involved in the CoCo (From Co-production to Co-creation) project led by Science Leader Katri Ojasalo and Project Manager Krista Keränen which is funded by TEKES (The Finnish Funding Agency for Technology and Innovation). The main goal of the project is holistic and balanced service business development. The project's strategy is to introduce co-creation tools designed during project which enable the companies involved co-create with their customers. In September 2011, Ojasalo and Keränen (2011, 1-12) presented the Co-creation Tool they had designed for analyzing the current state of a company's co-creation approach at the 1<sup>st</sup> Cambridge Academic Design Conference. In this thesis, I will refer to the tool they presented as the "CoCo Tool". The three components of the CoCo tool created by Ojasalo et. al. (2011, 7) are:

- I. Interview themes for gathering data
- II. Co-creation continuum; a tool for analyzing a company's co-creation approach
- III. The co-creation tree; this shows the current state of a company's business approach in a more coherent and inspirational way.

The second component, the Co-creation continuum, is an analysis tool used by the partner companies as a guide to lead business strategy, customer relationships and design processes with a co-creation approach. The continuum analyzes a company's co-creation approach from three different angles. Each of these angles has five specific viewpoints which will be referred to as "criteria" in this thesis. (Ojasalo et.al. 2011, 7-9.)

As of March 2012, several workshops have been held with the partner companies and the tool was presented in a workshop during a service design seminar held at Laurea UAS 8-10 February 2012 in which there were more than 200 numerous participants from around the globe. During May of 2012, another seminar titled "Co-creation Camp" will be hosted by Laurea University where the co-creation phenomenon will be further explored.

## 1.1 Scope

A small, yet important, part of the CoCo project is the task to design a tool which would assist companies in measuring the results of implementing the co-creation approach. This tool is to be designed and presented as a prototype in a workshop during the May 2012 Co-creation Camp. The prototype worksheet is designed based on the company's drivers, goals, objectives, co-creation partner(s), barriers, continuum criteria applied and the results achieved through its co-creation efforts. The prototype worksheet will be referred to as the COAM (Co-creation Approach Measurement) tool in this report.

Six of the eight COAM tool components are derived from the theories of noted business researchers, consultants and professors of whom will be described in more detail later in this report. The remaining two, results and remarks, are not supported by literature based theory; however, the reference for including these components in the worksheet design will be noted.

The theoretical framework of this thesis consists of the following themes:

- Business metrics
- Business measurement frameworks
- Co-creation activity
- Business drivers and barriers

Figure 1 depicts the overlapping theories applied in the design concept of the CAOM tool.

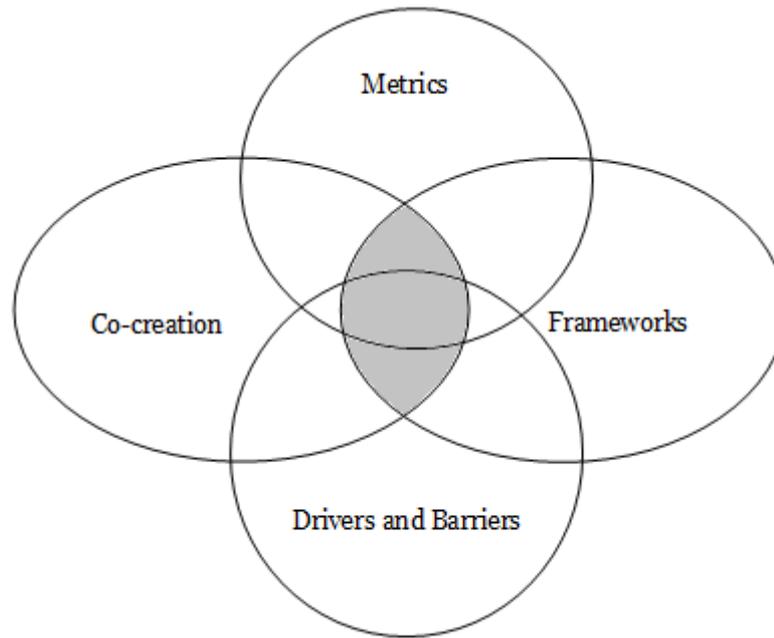


Figure 1: Theoretical framework

A CoCo project partner company which has had the most consistent participation in project workshops was chosen for data collection. There are no particular delimitations in this thesis outside of the COAM tool being designed for management tracking purposes.

Conclusions and recommendations are made at the end of the thesis. Afterwards, the COAM tool is to be presented at the Co-creation camp on 23 May to an audience made up of business leaders mainly from Europe

## 1.2 Purpose

The purpose of this thesis is to design a visual worksheet that gives the user a holistic glimpse of the company's co-creation continuum implementation efforts per case and to provide the reader a detailed description of the COAM tool.

It is intended that the COAM tool be presented in a workshop at the Co-creation Camp held 23-24 May 2012 at Laurea University of Applied Sciences and that it is further developed and modified as needed afterwards. The refined COAM tool will be included in the Co-creation handbook that will be pub-

lished during the project's fourth work package which ends in December 2012. (Keränen 2010, 11)

It is important to note that this research begins with the pre-understanding that the project partner (sponsor) is familiar with, has implemented or intends to implement the co-creation approach of the CoCo tool into the company's strategy, customer relationships and service design processes. For that reason, a brief description of the continuum is given along with its references. The research method will be explained along with the reason for choosing that particular method. The testing of the COAM prototype will produce feedback for tool modification and the reader to analyze the pros and cons of its use as a measurement tool in this reports conclusion.

When describing how the COAM prototype is built, each component of the worksheet will be explained along with the theory or theories which support it and suggestions of how the COAM worksheet may be modified by users in different situations.

### 1.3 Research Problem

The main research problem of the thesis was to devise a method to best measure a company's co-creation efforts. This requires defining what is measured along with numerous options for doing so. The thesis also attempts to answer at what level efforts are being measured.

The research starts with a deductive approach, in that several theories have been combined in order to create the necessary components of the COAM prototype. The research strategy used in this report focuses on the needs of the sponsor vice the needs of the researcher. Prior workshops with project partners have also given the pre-understanding of business needs and drivers. The research becomes inductive at other phases of the research once data is gathered, analyzed and evaluated. A theoretical construct from several experts in the field of business performance measurement has been used to create the concept for designing the COAM tool prototype. The combination of the inductive and deductive used in this report is a hybrid approach known as the abductive. (Saunders, Lewis & Thornhill 2009, 159)

Research is conducted using qualitative methods. Data will be gathered by semi structured interviews and presentations to partner companies and focus groups.

#### 1.4 Structure of the thesis

The structure used to conduct the research of this thesis is a “zipper” type. This means that a theoretical background is not put into a separate section. Each theory will be described in detail in the subheadings of corresponding sections in order that the reader need not refer to separate sections.

The main sections of the thesis are the introduction, the theories supporting metrics an frameworks, design strategy and theory for building the COAM tool, causal relationships between components of the COAM tool, the development and testing of the tool and recommendations for development and further testing.

The development and testing of the COAM tool is described after causal relationships have been explained

## 2 Research approach

The action research method is most suited for the research strategy of this thesis due to the continuing cycle of diagnosis, action and evaluation.

“There are four common themes in literature which interpret action research. The first theme is, for example, when the research may be concerned with the resolution of organizational issues such as the implication of change. The second relates to an involvement of the practitioners in the research along with the researchers. The third theme emphasizes the iterative nature of the process of diagnosing, planning, taking action and evaluating. This is a spiral that commences within a specific context and clear purpose. The fourth suggests that action research should have implications beyond the immediate project; in other words, it must be clear that the results could inform other contexts.” (Saunders, Lewis & Thornhill 2009, 147.)

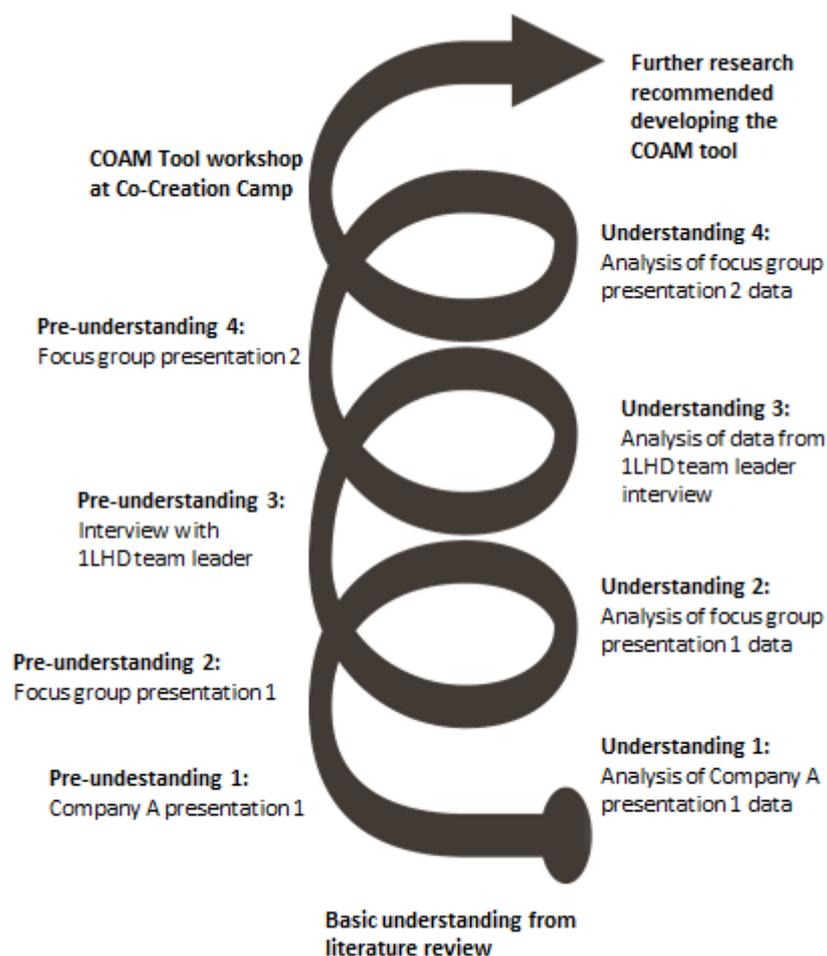


Figure 2: Action research spiral (COAM Tool)

The action research spiral shown in figure 2 depicts the basic understanding gained from literature on business metrics and frameworks as the starting point from which the first presentation to company A was formed. The writer entered this presentation with a pre-understanding of the company's measurement needs based on previous CoCo project workshops. Comments and data gathered from this presentation formed the first understanding of how to create a more useful tool. This led to a pre-understanding of how to communicate the identification of measurement needs and the tracking of co-creation efforts in conjunction with objectives and goals. The understanding gained from the first focus group presentation led to further development in explaining how metrics are applied to goal supporting objectives and how causal relationships between components eventually relate to the company strategy. The third re-understanding, prior to the 1LHD team leader interview was that the COAM tool would not suit middle

management as well as it would top company echelons. This turned out to be incorrect as a very viable application of the COAM tool which turned higher level strategic objectives into mid-level management goals with that manager's own set of critical success factor objectives. Pre-understanding 4 assumes that those completely unfamiliar with the co-creation concept can, after one day of workshops concerning the co-creation phenomena, grasp the concept of the COAM tool on the second day of the co-creation camp. The understanding gained from the second focus group presentation provides the pre-understanding required to present the COAM tool to the audience of business leaders on the second day of the co-creation camp. From that point on, recommendations for further research to facilitate developing the COAM tool can possibly lead to its publication in the Co-Creation Manual in the winter of 2012.

### 3 Metrics and frameworks based on literature

A condensed definition of business metrics is "A unit or units of measure to gauge a company's performance and provide the company's employees with a standard to improve" (Gregory 2012). According to Askar, Imam & Prabhakar (2009, 91), "Business metrics and performance measures serve as dashboard gauges that help in guiding the strategic direction of a firm". Askar (et.al. 94) mentions that part of what make up good business metrics is if they are aligned with company strategy and reflect progress against a plan. They argue in this article that traditional business metrics that use "financial performance measures as their mainstay fall short of reflecting today's business environment". If Askar's theory that good metrics reflect progress against a plan is to be accepted, then it can be deduced that either complete success, partial success or failure to achieve a goal or objective can be considered a metric.

There is a wide range of theories and literature in existence pertaining to business metrics and, subsequently, there are many methods used to assist in measuring business performance such as ROI (return on investment), ROA (return on assets), EVA (economic value added) and ABC (activity based costing). Vince Kellen (2003, 5) states that "Different frameworks and reference models for measuring business performance have evolved from a variety of origins. Frameworks are approaches to measurement that businesses frequently adopted, often with significant diversity in their design and use. Reference models are more rigorous

standards, typically around specific performance metrics and associated business processes, adopted by an industry or by a common functional unit". This suggests that metrics are used as a component of PMS (performance measurement systems) and that these systems, when structured, become known as frameworks. In addition to EVA and ABC, Kellen (2003, 5) mentions the BSC (balanced scorecard) among the different frameworks that "have evolved from a variety of origins". He also states that frameworks are "approaches to measurement that businesses frequently adopted, often with significant diversity in their design and use."

Walid, Annath and Adel (2010, 5, 12) discuss in their article a performance measurement scorecard, widely used by French companies, called the TdB (Tableau De Bord) which, translated literally, means dashboard in English. The TdB is compared to the BSC in their article. Wongrassamee, Gardiner and Simmons (2003, 14) state that the EFQM model (European Foundation for Quality Management) and the BSC "each consist of a non-prescriptive template offering managers a relatively small number of key performance metrics to focus on." Their analysis concludes that these two frameworks seem to be developed from similar concepts despite some significant differences. The article also summarizes that it "is difficult to find a perfect match between a company and a performance measurement framework and that further research should concentrate on how to implement strategic performance frameworks effectively in specific types of organization." (Wongrassamee et.al. 2003, 14.)

According to Douglas Lambert and Matias Enz (2011, 100), "In order to measure the value that is co-created, revenue minus avoidable costs should be identified for each side of the relationship as well as for specific initiatives that are conducted within the eight Cross-functional processes." While the cross-functional processes referred to in their paper will not be a primary focus of this report, it is important to consider the importance revenue minus costs may have in a manager's evaluation process. Kaplan and Norton (2004, 29) state that "improvements in intangible assets affect financial outcomes through chains of cause-and effect relationships."

Three common types of business measurements are economy; those which depict the cost of effective inputs, efficiency; those that measure how well the process

performs within the given inputs, and effectiveness; a comparison of outcomes with the actual outputs. (Project Metrics)

#### 4 Building the Tool

The COAM tool is a prototype worksheet that has a driver as the main heading. Underneath the heading are seven columns assigned to each component of the tool. The components, listed from left to right are the goal, objectives, partner(s), barriers, criteria, results and remarks. Each component and its supporting theory will be described in detail in this section.

The tool is built on the concept that companies can relate successful implementation of the CoCo continuum, directly or indirectly, to financial performance. In both the long and short run, connections to financial performance can be made with what may seem to be intangible themes within the co-creation approach.

##### 4.1 Worksheet design

In order that the reader understands each component of the worksheet, it is first necessary to describe the business performance measurement frameworks and business metrics theories researched which have led to the concepts of designing and building the COAM tool. The concept applied its design tool has been derived from a combination of those applied to the BSC, TdB and the EFQM model frameworks.

Being that business strategy is one of the main focuses of the CoCo project, EFQM and BSC concepts were integrated into designing the eight components of the COAM tool. Wongrassamme et.al. (2003, 15) says that the EFQM and the BSC are integrated performance models that attempt to tie performance metrics more closely to a firm's strategy. Lambert and Enz's (2011, 11) belief in the need to quantify in financial terms the value co-created between firms, although not necessarily shared by all COAM tool users, adds to the theory of conceptually linking together the COAM tool's goal, objectives, barriers, criteria applied and results. The idea to create the COAM tool as a visual dashboard

that can contain codes or references to supporting reports or documents as needed comes from the TdB.

Figure 3 shows the blank COAM tool with its eight components. The worksheet in this report is used for one driver and one supporting goal. For each goal, space for more than one objective, partner, barrier, the theme applied and result is allotted. The tool is designed so that list-referring codes would be used in the blocks for barriers and criteria applied. The results and remarks sections may be used to use references to separate supporting reports and documents. It is in this manner that the tool resembles an automobile dashboard. In referring to the TdB, the dashboard of an automobile gives data to the driver, but occasionally it is required to look under the hood or elsewhere on the vehicle to reveal the source of the data. The same concept applies to the COAM worksheet where barriers, applied criteria, results and remarks may be so complex that it is necessary to search elsewhere for the supporting information. Each of the eight components will be explained in detail with supporting theories in this report.

<b>COAM WORKSHEET</b>							
<b>Driver:</b>							
Goal	Objectives	Partner(s)	Barrier(s)	Criteria applied	Results	Remarks	

Figure 3: Blank COAM worksheet

## 4.2 Business drivers

The word “driver” or “business driver” has become quite common in business meetings and seminars. It may be assumed that consultants, business managers and students have some understanding of its definition, but the challenge exists as to generalizing what a particular user may term as a business driver. Because companies vary in strategy and concept, the ability to modify the COAM tool to fit specific cases is critical. It is important to emphasize that the COAM tool is designed to meet the needs of the individual firm and should not be deemed as prescriptive in nature. It is, however, beneficial to the reader to provide theories as a guideline to developing an understanding of the term “drivers” and how it has been used in different contexts.

In this thesis, business drivers are defined as the “people, knowledge and conditions that initiate and support activities for which the business was designed” (businessdictionary.com)

### 4.2.1 Theory of drivers

Lambert et al. (2011, 108) describes potential drivers as “business reasons for expanding the resource commitment to the relationship.” Barua, Konana, Whinston and Yin (2000, 23) state that business-process drivers “include standards and processes for interactions with customers and trading partners”. Lin and Lin (2006, 97) refer to drivers as “the key capabilities, resources and relationships that are the basic ingredients of value creation for a particular firm” and recommend to the reader to “think of those ingredients as assets that either grow or diminish over time, depending upon how they are managed.” The EFQM model has “enabler” criteria such as leadership, people management, resources, processes, policy and strategy (Wongrassamme et.al, 2003, 17) which, in part, support the concept of the COAM tool drivers. This report will use these common elements to describe drivers in the COAM worksheet examples given in later text. In Edward de Bono and Robert Heller’s “Thinking Managers” web page, Intel leader Andrew Grove describes strategy as that what a firm must do in order to get from where it is now to where it wants to be at a certain time in the future (Business strategies for thinking managers). The common construction of these

theories is made up of intangible elements such as skills, experience, knowledge, capability, competence, environment, strategy and innovation. If Groves' definition of strategy is to be accepted, then it can be reasoned that the online business dictionary definition of business drivers as the "people, knowledge and conditions that initiate and support activities for which the business was designed" is an adequate one.

Figures 4 and 5 illustrate how the idea of the COAM worksheet drivers was taken from Barua and Lambert.

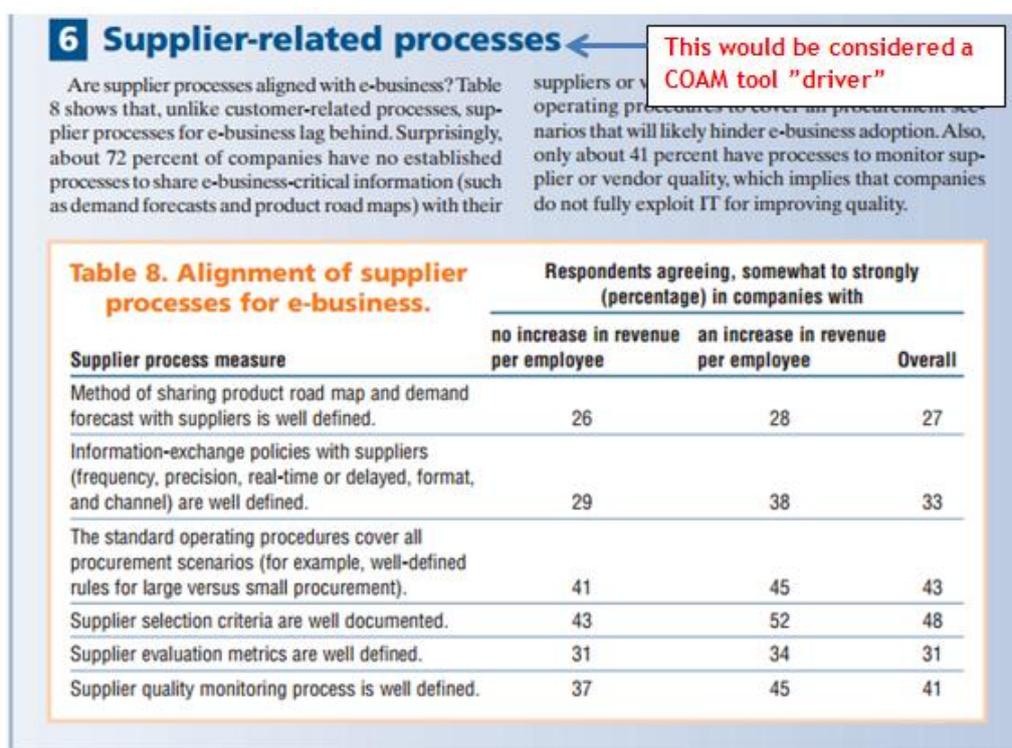


Figure 4: Drivers from Barua et.al (2000, 28)

**Figure 3 from Lambert's Otago 3, Paper 13**

**ASSET/COST EFFICIENCY**  
 Drivers are business reasons for expanding the resource commitment to the relationship. For each item, develop specific goals and identify the priority. Priority is: 1=Critical, 2=Very Important, 3=Important

**This would be considered a driver in the COAM worksheet**

What are the initiatives that will reduce cost or improve asset utilization?

Driver	Goal	Priority
• Product costs savings	2% per year	1
• Distribution costs savings, handling costs savings	7% during 1 <sup>st</sup> year	1
• Packaging costs savings and green initiatives	Satisfy Wal-Mart's requirements	3
• Reduce order-to-cash cycle time	By 10 days	2
• No management time devoted to conference call to key customers explaining service failures due to supplier problems	Zero within 3 months	1
• Assets utilization (reduce plant over-time due to surprise orders)	No surprise orders by quarter-end	2
• Integrate planning across business and plants (visibility of capacity available across plants)	Within 12 months	3

Figure 5: Drivers extracted from Lambert et.al (2011, 108)

### 4.3 Goals

The goal is the starting point from where the COAM tool begins to measure. The goal component of the tool is designed as having been derived from the driver and possibly originating in the form of a question. Without a goal, objectives, barriers, or a need to co-create with a partner or customer would not exist. Furthermore, without objectives to support goals, there would be no results for which to measure co-creation approaches.

In this thesis, the definition of a goal is: "A long-term aim that you want to accomplish." (DifferenceBetween.net).

#### 4.3.1 Theory of the goal component

The idea to create the goal component of the COAM tool was derived from combining the theories presented in the article "Making E-Business Pay" by Barua, Konana, Winston and Yin and an academic paper written by Lambert and Enz in the Otago Forum-3.

The Otago Forum-3 paper measures value in co-creation in business-to-business relationships. The driver definition in this paper differs from that used in this report, but goals are used as a component of a dashboard worksheet which was the inspiration for creating the COAM tool.

A close look at figure 6 shows from the article “Making E-Business Pay” (Barua, Konana, Whinston and Yin 2000, 28) shows how a goal is derived from a question pertaining to the driver. In this example, the driver is supplier-related processes. The question underneath the driver heading is; “Are supplier processes aligned with e-business?” From this question, it is possible to create a goal to “align supplier processes for e-business”. Although creating a “goal” for a worksheet to measure a co-creation continuum is not the intention of the Barua article, it has provided insight as to how a driver can be fragmented into separate elements that serve to create the goal component of the COAM prototype worksheet.



Figure 6: Sample worksheet (Barua et.al 2000, 28)

#### 4.4 Objectives

The objectives component of the COAM worksheet was created for the purpose of giving the user a detailed, methodical approach to achieve the driver-supporting goal within a given time frame. Because it is possible that more than one objective is required in order to achieve the goal, the COAM worksheet is designed to accommodate two or more objectives in the column next to a the goal.

##### 4.4.1 Difference between goals and objectives

In this thesis, there is a difference between a goal and an objective. There are conflicting schools of thought as to which of the two terms is the broader and which is more specific. “Goals and objectives are often used interchangeably, but the main difference comes in their level of concreteness. Goals without objectives can never be accomplished while objectives without goals will never get you to where you want to be. Objectives are very concrete, whereas goals are less structured. Goals are long term and objectives are usually accomplished in the short or medium term. Goals are hard to quantify or put in a timeline, but objectives should be given a timeline to be more effective (DifferenceBetween.net).”

Objectives are defined in this thesis as statements of specific, measurable, achievable, relevant and time bound outcomes that are to be achieved in order to fulfill a goal or aim (tutor2u).

##### 4.4.2 Theory of the objectives component

The main theory supporting the creation of the objectives component of the COAM tool comes from the article “Making E-Business Pay: Eight Key Drivers for Operational Success” by Anitesh Barua et.al (2000, 22-30). Although the article is primarily focused on operational drivers for electronic businesses, the concept of creating a critical question for each driver, then then listing activities and tasks to facilitate answering the question supports the idea of the COAM worksheet driver.

The example in figure 7 shows how objectives can be derived from a concept described in the Otago Forum-3 article “Measuring Value in Co-Creation in Business-to-Business Relationships” (Lambert, D. Enz, M. 2011, 108). As can be seen, Lambert’s definition of a driver is different of that used in this thesis, but the combination of a tangible critical success factor, product cost savings, with a defined quantifiable percentage and time line, 2% per year, or to reduce cash-to-order by ten days supports the COAM tool theory of goal supporting objectives.

#### ASSET/COST EFFICIENCY

Drivers are business reasons for expanding the resource commitment to the relationship. For each item, develop specific goals and identify the priority. Priority is:

1=Critical, 2=Very Important, 3=Important

The COAM tool combines these two items to form an objective

What are the initiatives that will reduce cost or improve asset utilization?

Driver	Goal	Priority
• Product costs savings	2% per year	1
• Distribution costs savings, handling costs savings	7% during 1 <sup>st</sup> year	1
• Packaging costs savings and green initiatives	Satisfy Wal-Mart's requirements	3
• Reduce order-to-cash cycle time	By 10 days	2
• No management time devoted to conference call to key customers explaining service failures due to supplier problems	Zero within 3 months	1
• Assets utilization (reduce plant over-time due to surprise orders)	No surprise orders by quarter-end	2
• Integrate planning across business and plants (visibility of capacity available across plants)	Within 12 months	3

Figure 7: Sample worksheet (Lambert et.al 2011, 108)

The example in figure 8 shows how objectives are derived from the Barua et. al. concept. In this case, customer-related processes would be a driver that is supported by a goal of aligning customer processes for e-business. The three objectives would be to create one contact point for all service needs, take the required action to solve customer complaints and to create a system to ensure customer feedback is quickly disseminated into organizational processes. Exact time lines should be given for each objective created from this example, along with a more detailed description of the steps that should be

taken to resolve customer complaints, but the example has provided adequate supporting theory for the COAM tool purposes.

**5 Customer-related processes**

Are customer processes designed for e-business practices? Results indicate that they are. As Table 7 shows, approximately 71 percent of companies have procedures to quickly incorporate customer feedback into organizational processes. More than 75 percent have a single point of contact to handle customer service requests, and 81 percent have very few steps to resolve such requests. These results are consistent with those regarding IT customer orientation, in which 74 percent of the companies now allow customers to seek customer service online (see Table 1).

**Table 7. Alignment of customer processes for e-business.**

Customer process measure	Respondents agreeing, somewhat to strongly (percentage) in companies with		
	no increase in revenue per employee	an increase in revenue per employee	Overall
Customers generally have one contact point for all service needs.			
There are a few steps to resolve customer complaints.			
Customer feedback is quickly disseminated into organizational processes.			

**These items would form the basis of objectives for the COAM worksheet**

Figure 8: Concept of objectives (Barua et.al. 2003, 28)

#### 4.4.3 Quantitative metrics as an objective

If a company wants to relate co-creation efforts to a certain set of quantitative metrics, those metrics would be listed in the 'objectives' component. There are many quantitative metrics with easy to access formulas. If a company has chosen to base objectives off such metrics, it may be that it is applying the University of California approach 'SMART' test to these objectives; specific, measurable, attainable, reachable and time based. (Setting SMART Goals and Objectives)

Figure 9 shows an example where a company has set a goal to maximize profits in a certain sector based on their customer knowledge which it considers to be one of its drivers. The goal depicted in the figure has no time frame or critical success factors with specific targets. The objectives, however, show specific targets and critical success factors in the form of quantitative metrics that are to be completed within a certain time frame. The company, in this example, has determined a 5% reduction in customer churn rate and a 5% increase in customer life-time value (LTV) within the following 6 months are re-

alistic objectives that would facilitate achieving its goal of maximizing profits in the frequent user sector.

A customer churn rate measures customer attrition and it is defined as the percentage of customers who stopped doing business with a company in a period divided by the average number of customer existing in that period (churn rate). Changes in a business' churn rate can provide feedback for a company by indicating customer response to service, pricing, competition and the average length of time an individual remains a customer (predictive churn modeling). The churn rate is also an important metric for determining customer life time value.

Customer life time value (LTV) is a metric which shows determines the sales to a particular customer or customer segment in the future. Data for customer LTV is collected from past customer history and is based on expected retention, spending rate and future value. Other factor such as segment, quality of customer and churn rate may also be figured in (Middleton-Hughes, A. 2012). There are many formulas for calculation LTV that are easily accessible through the World Wide Web.

Churn rate and LVI metrics were chosen for this example because they are easily identified with maximizing profit in a customer segment and customer knowledge.

DRIVER: Customer Knowledge	
GOAL	OBJECTIVES
Maximize profits in the frequent user segment	Reduce Customer Churn Rate 5% in 6 months
	Increase LTV 5% within 6 months

Figure 9: Quantative metrics as objectives

#### 4.5 Partners

In order to describe how the term “co-creation partner” is defined in this thesis for the COAM tool, defining each term separately is necessary.

Co-creation is a business strategy focusing on customer experience and interactive relationships that allows and encourages a more active involvement from the customer to create a value rich experience (BusinessDictionary.com). The business dictionary definition implies that co-creation occurs mainly between a business entity and a customer and that two or more parties involved in the process.

It is also accepted in this thesis that co-creation can occur between partners outside the traditional transaction based paradigms of the provider-customer relationship. As an example, co-creation efforts can be applied to an agent who sells the company’s product or service, a school that provides training for company personnel, special interest stakeholders or any legal or natural person with whom shared value creation is a goal or objective.

A condensed definition of a partner is; “one that is united or associated with another or others in an activity or a sphere of common interest” (The Free Online Dictionary).

In this thesis, a co-creation partner is defined as a legal or natural person who shares a value creation interest or relationship with the company.

#### 4.5.1 Theory of partners

The theory supporting the ‘co-creation partner’ component of the COAM tool is not necessarily derived only from literature. The company makes the final decision of with whom to co-create. Some companies may consider that only the customer and the customer’s customer are true co-creation partners. Others may decide to include certain actors within the value chain as co-creation partners in order to achieve their goal. Ostrom et. al. (2010, 1-33) state that the interaction between a company and its customers can take place in complex environments through diverse channels. This implies the possibility of actors in external value networks as co-creation partners. Ojasalo et. al. (2011, 4) quotes that opportunities for value creation exist at all points of interaction between the customer and provider. A company and its co-creation partner may consider value in numerous terms other than monetary, such as knowledge capital, reputation, loyalty, benefits and security.

<b>DRIVER:</b> Customer Knowledge		
<b>GOAL</b>	<b>OBJECTIVES</b>	<b>CO-CREATION PARTNER</b>
Maximize profits in capital area middle income segment	Reduce customer churn rate 5% within 6 months	Segment area computer/hardware retailer
		Segment area technical school
		Customers: Segment area SMEs
	Increase LTV 5% within 6 months	Segment area computer/hardware retailer
		Segment area technical school
		Customers: Segment area SMEs

**Figure 10: Types of co-creation partners**

The example in figure 10 shows co-creation partners who may have roles in an external value network. In the case of example shown, segment area computer software/ hardware retailers and technical schools may very well fill only a customer role, but it is possible that they are value network points of interaction between the customer and the company providing an opportunity to create value for the company, customer and their selves.

#### 4.6 Barriers

A barrier is something concrete or immaterial which impedes, obstructs or acts as an obstacle. Without a clear understanding of what obstacles exist that prevent a firm from reaching its goal, the firm runs a risk of wasting valuable resources and, ultimately, failure in its co-creation efforts. This critical component of the COAM worksheet was designed to add reality to the process of evaluating a company's co-creation approach. The user can best choose what continuum theme or criteria to apply and from what basis to measure success by

knowing and documenting the barriers that serve as obstacles from co-creating value with a partner or customer.

It is possible those barriers may be preconceived by the user or that they may emerge as the co-creation relationship progresses. Preconceived barriers would be those that the user has a pre-understanding of when entering the co-creation relationship and may be annotated as such separately on the worksheet. The manager may discover that the preconceived barrier may not exist in reality once in the co-creation relationship yet realize that other non-expected barriers emerge. These barriers could be annotated as “emergent barriers”. Barriers may take many forms, for instance internal and external, and categories can be further fragmented at the user’s discretion.

A possibility exists that emerging barriers may necessitate newer objectives. This places an even higher level of importance on this component of the COAM worksheet. Likewise, preconceived barriers that turn out to be non-existent may have an effect on objectives.

In order to keep the COAM tool simple and visual, it is suggested that barriers be listed on a separate sheet and reference coded on the worksheet.

In this thesis a barrier is defined as something concrete or immaterial on behalf of the business environment, the company or its co-creation partner which impedes or restricts the company in the achievement of its goal and/or objectives.

#### 4.6.1 Theory of barriers

Grace and Jerry Lin (2006, 93-103) try to answer in their article, Ethical Customer Value Creation, the question of what drivers can facilitate an organization to create more value for its customers and, conversely, what barriers block that organization from creating customer value. While Lin (et.al) focuses primarily on a firm’s internal dimensions of processes and employees, the concept of comparing barriers against drivers is the main supporting theory for creating this component of the COAM worksheet. Lin categorizes the drivers and barriers in the article from the dimensions of employees and pro-

cesses. The idea to code barriers in the COAM worksheet and list them on a separate sheet has also come from this article.

Figure 11 below depicts a statistical table from the Lins' article showing the drivers and barriers from a process dimension along with respective total scores, averages and standard deviations. The assignment of dimensions, scores, averages and standard deviation has given the idea that users may want to categorize barriers according to the needs of their respective cases.

<b><u>Drivers (+)</u></b>	<b><u>Barriers (-)</u></b>
<i>Employee Dimension</i>	<i>Employee Dimension</i>
1. Distinctive skills	1. Depression and discouragement
2. Satisfaction and achievements	2. Inadequate knowledge
3. Learning and training	3. Distrustful environment
4. Personal experience	4. Experience shortage
5. Knowledge	5. Lack of value-creation culture
6. Team work	6. Insufficient rewards
7. Personal rewards and benefits	7. Deviation of recognition
8. Capability and motivation	8. Discouraging activities and environment
9. Trust and organizational value	9. Poor value management
10. Customer-linking capabilities	10. Heavy workloads
11. Value proposition	11. Poor customer relationship
<i>Process Dimension</i>	<i>Process Dimension</i>
1. R&D capability	1. Short of core technology
2. Core competence	2. Bad services and attitudes
3. Knowledge assets	3. Lack of long-term perspective
4. Innovation and evolution	4. Short of market segmentation
5. Capability for differentiation	5. Poor resource support
6. Futural perspective	6. Rather profit than value
7. Distinctive expertise	7. Mutual distrust
8. Globalization advantages	8. Poor value-chain activities
9. Trustworthy environment	9. Arrogant and conceit attitude by the organization
10. Niche advantages	10. Lack of an understanding of customers' needs
11. Successful strategy	

Figure 11: Drivers and barriers (Lin et.al 2006, 98)

#### 4.7 Applied criteria

This report begins with the pre-understanding that the reader is familiar with the CoCo Tool and its three components described by Ojasalo and Keränen (2010). Data for this report will be gathered from CoCo project partners and from those firms who participate in the Co-Creation Camp held 23 May 2012.

#### 4.7.1 Theory of applied criteria

The criteria applied are those from component II of the CoCo tool which is the co-creation continuum, a tool for analyzing a company's co-creation approach. The COAM prototype worksheet is designed so that drivers, goals and milestones play a major role as to what themes a manager chooses to employ in his or her co-creation efforts.

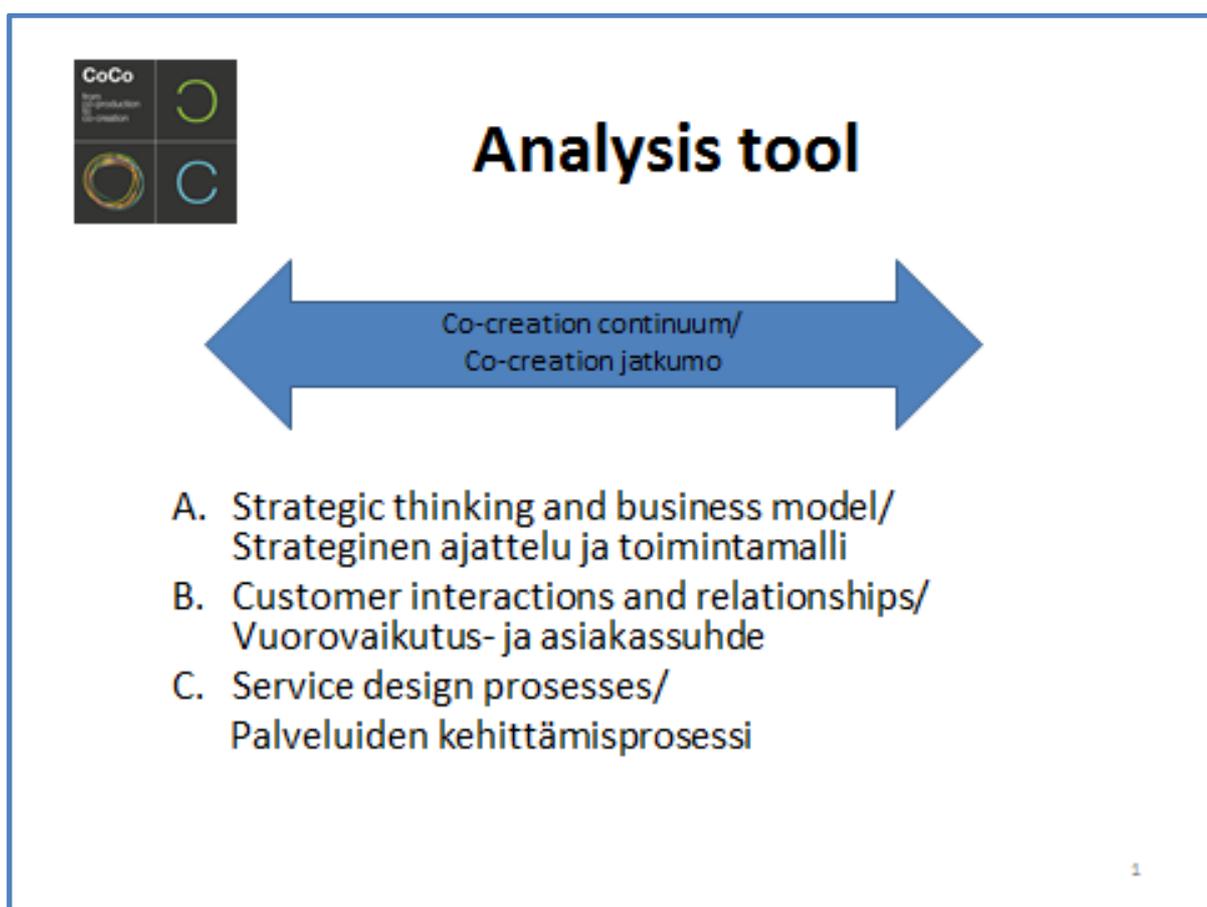


Figure 12: Co-creation continuum general description

Figure 12 shows the continuum's is three partly overlapping angles and figure 13 shows each angle's five more specified supporting viewpoints along with the two extremes in each viewpoint. These viewpoints will be referred to as criteria in this report and on the COAM tool. At one end of the continuum, the co-creation approach is not at all evident. At the other end, company's business approach is led by the co-creation approach. (Ojasalo et.al 2011, 7-9)

The COAM tool makes use of the relationship of drivers, goals, milestones and barriers to the continuum angles and viewpoints. The applied angles can be coded in the worksheet. For example, the code A2 in the “criteria applied” section of the COAM tool would represent “To jointly create comprehensive customer solutions/Value-in-use” from the co-creation continuum in figure 13.

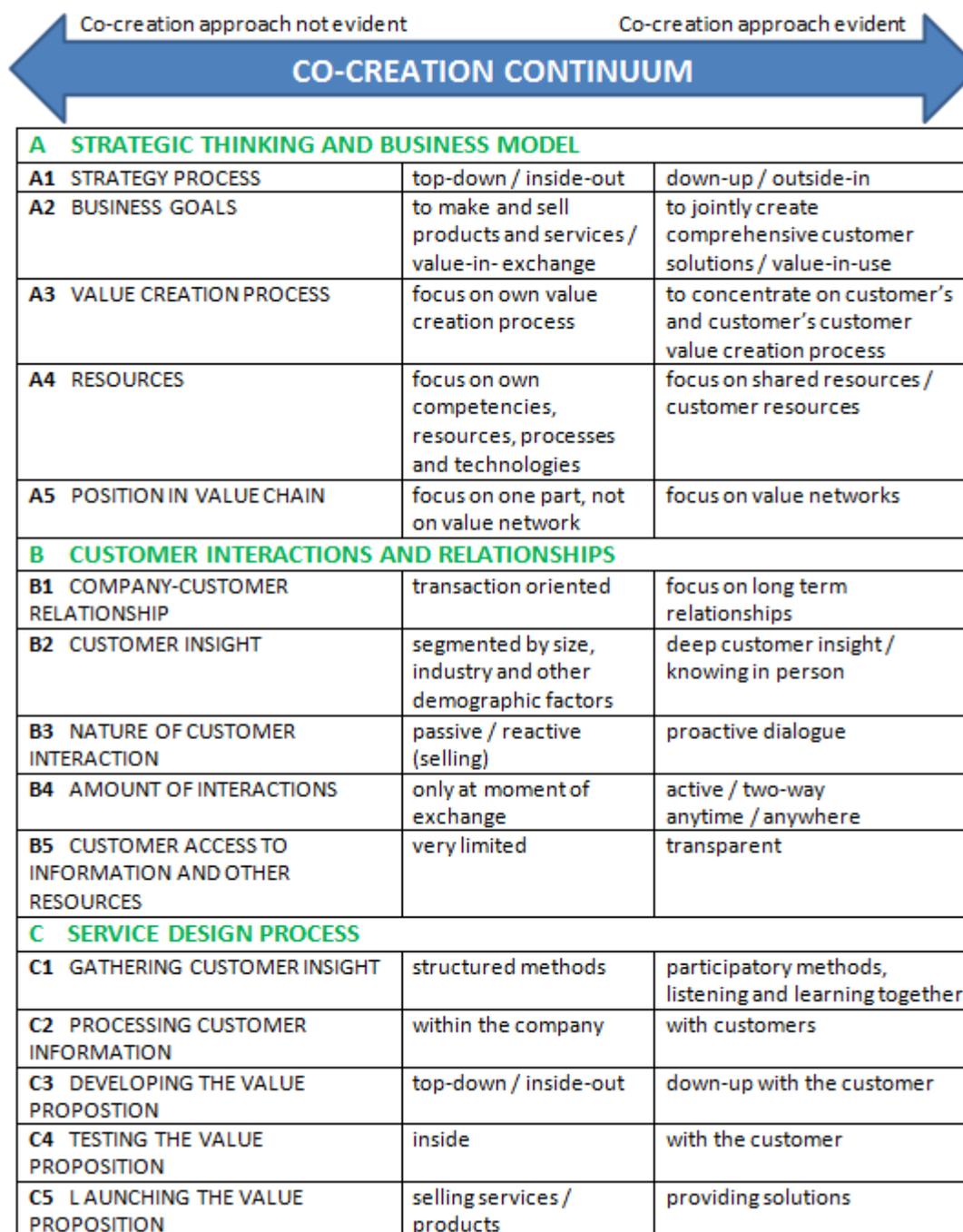


Figure 13: Co-creation continuum (Ojasalo et.al 2011, 8)

#### 4.8 Results and Remarks

Results are recorded into the worksheet as the final outcome of the co-creation equation. They are the main purpose for creating the COAM tool. By viewing outcomes in an honest way, steps can be taken to correct misguided efforts and best practices for future efforts can be recorded. Results can be entered on the worksheet in a general form with a reference made to a separate report. They may be complicated and require that the manager redirect efforts to the employment of other themes or the implementation of other milestones. It can be assumed that, in most cases, users may want to record results in detail and provide supporting remarks.

#### 5 Component causal relationships

In order for the COAM tool to be implemented, the causal relationships between the components should be described. The tracking and evaluation process is dynamic and certain components within the tool can have a changing effect on another. For example, it may be discovered that an unexpected barrier has emerged during the co-creation process that requires an additional goal supporting objective, new co-creation partners and a different set of continuum criteria to be applied. It is possible that the dynamic process of tracking and evaluating co-creation progress is continuous and two-way.

A motivation to co-create must be established. If there were no partners, goals, objectives or any barriers obstructing the company from achieving set objectives, there would be no need to co-create. The co-creation process for any certain set of objectives should be measured in order to economize and maximize efforts. In order to measure the company's co-creation process, it must be tracked.

If a company has set objectives in order to achieve a strategy supporting goal, knowing the drivers which enable company operations may assist in determining if the goal and objectives are realistic. It may be possible that the company does not have accurate knowledge of its drivers. By tracking the co-creation process, it may occur that the company uncovers unknown strengths and limitations or drivers which may lead to setting newer goals.

Describing the causal relationships between all components of the COAM tool will begin with a basic description of that relationship which exists between drivers, barriers and co-creation efforts in order to get a basic foundation of the causal relationship concept. Understanding this core causal relationship concept will make it easier to understand the following description which depicts the relationship between all components of the COAM tool.

### 5.1 Relating drivers, barriers and co-creation efforts

At its most basic level, the COAM tool aims to assist in the measurement of a company's co-creation efforts. If barriers exist which counteract drivers, then a possible motivation to co-create exists. If co-creation efforts are employed, evaluation of the effectiveness of these efforts would inform the company if the resources deployed are properly focused with adequate support or are mis-directed.

The hierarchical depiction of the relationship between drivers, barriers and co-creation efforts in figure 14 shows motivation to co-create as a critical relationship dynamic created by the imbalance caused by drivers and barriers. Although not shown in the diagram, the motivation to co-create in this figure implies that goals, objectives and co-creation partners based on drivers and barriers are in place.

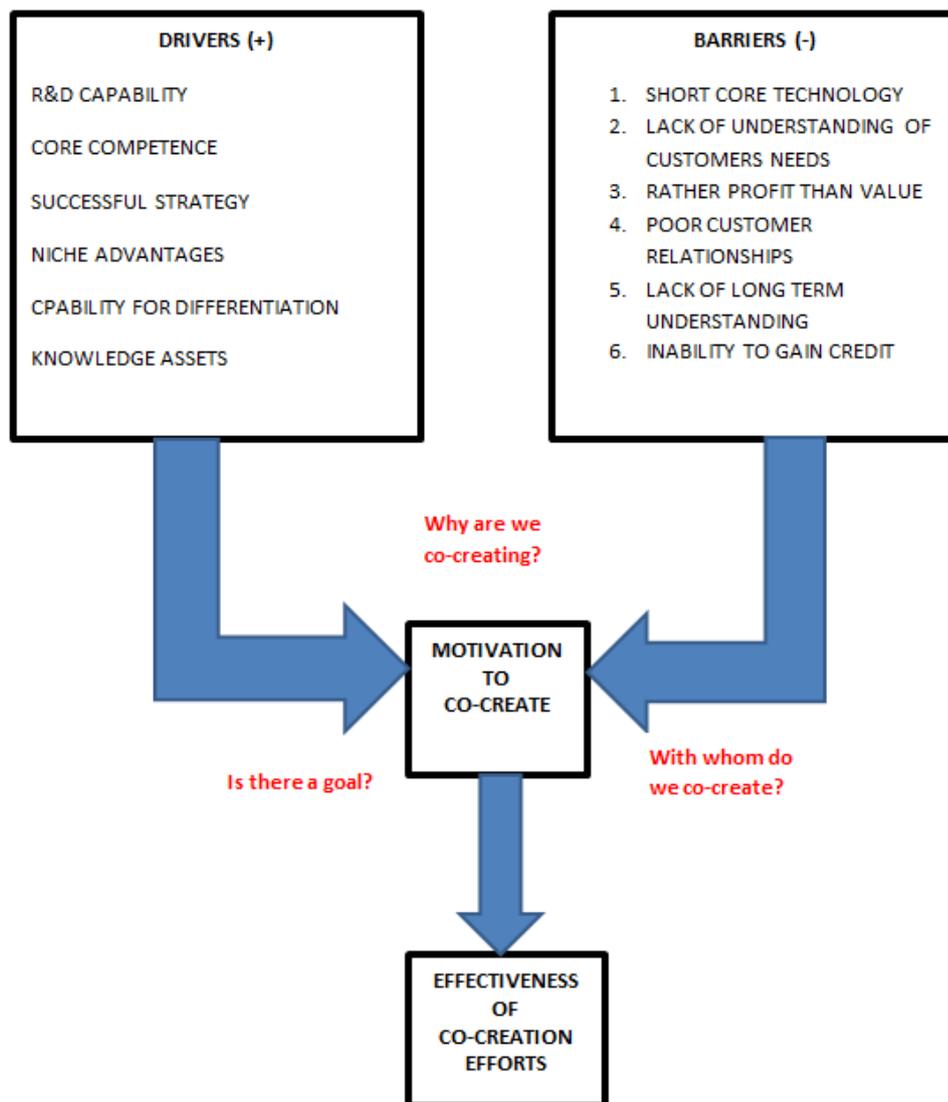


Figure 14: Causal relationship between drivers, barriers and co-creation efforts

## 5.2 Relating goals, objectives, partners and barriers

An understanding of how the driver, barrier and co-creation effort effectiveness relationships are connected with a motivation to co-create facilitates understanding the causal relationship of goals, objectives and partners. Goals, objectives and partners make up the core of the motivation to co-create. Many objectives face some type of barrier. The barrier may be organic to the company, co-creation partner, the operating environment or any combination of these. The predominant factor presented by a barrier is that it impedes in some way the accomplishment of an objective which ultimately affects goal accomplishment.

Figure 15 shows a hierarchal depiction of the causal relationship between goals, objectives and partners. It demonstrates that a goal is derived from a driver and shows the two-way relationship of how a goal determines what objectives are to be set and the effect accomplishment or failure to accomplish an objective has on the goal. Two or more objectives can have the same type of interdependent relationship depending on the success of their outcomes. Co-creation partners can either determine or be determined by the goal supporting objectives. If the partner is a customer, it may be so that this customer has a role determining the objective, for example; reduce customer churn rate by 5% in 12 months. Conversely, if an objective is to gain the latest technology within 8 months, this objective may warrant the company's strategic selection of co-creation partners such as technical schools, loan agencies and manufacturers.

Barriers are critical to creating a motivation to co-create. It is possible that co-creation would not be necessary without a barrier. The COAM tool is being built on the concept that drivers are positive entities on their own and provide the question to determine a goal. Barriers, conversely, are negative entities which do not necessarily stand alone; they can be preconceived or emergent. It is possible that preconceived barriers do not exist in reality. Barriers help to create goals and have an effect on their accomplishment. They may be also organic to the co-creation partner as well as having an effect on partner selection. Regardless if a barrier is organic to a co-creation partner, the company, the environment, preconceived or emergent; its relationship is one dimensional towards co-creation partners and the creation and accomplishment of a goal and its supporting objective(s). Barriers are affected by actions taken to accomplish the key success factors of goal supporting objectives. How barriers are affected will be discussed later in this report.

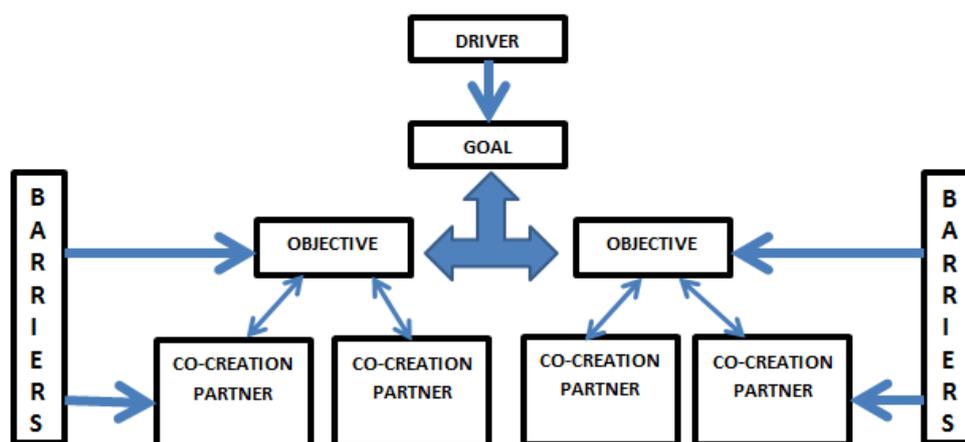


Figure 15: Causal relationship between goals, objectives and partners

### 5.3 Relating applied co-creation criteria to the objective

Ojasalo and Keränen have described a co-creation paradigm through their research that encompasses a company's strategic business model, customer relationships and service design process. The continuum design is simple in that it categorizes fifteen viewpoints divided equally amongst the three angles, yet broad enough in perspective that many cases involving co-creation efforts can be guided by this continuum. The co-creation continuum they designed is described in section 4.7 of this report with its three overlapping theme angles and each angle's five viewpoints (referred to as 'criteria' in this thesis) is a guideline for co-creation efforts. Figure 13 in paragraph 4.7.1 shows an arrow at the top of each theme angle indicating the two extremes of co-creation approach evidence in correlation with the supporting five criteria per angle. The theme angles are labeled A, B and C respectively and the criteria are labeled numerically as follows; A: 1-5, B: 1-5, C: 1-5. This does not mean that other themes or criteria outside the CoCo tool's co-creation continuum do not exist or cannot be tracked and evaluated by the COAM tool.

The main priority of the continuum criteria applied in accordance with the COAM tool is accomplishment of a goal supporting objective. In order to achieve success, the proper criteria must be applied in order to overcome barriers which may be organic to the partner, company or business environment. In this respect, there is a two-way dynamic relationship between the criteria

applied and the objective via the partner and objective results while a one way relationship exists from the criteria applied to the barrier. Barriers, in turn have a one way relationship towards the co-creation partner, objectives and goal. Barriers which exist are organic to the company and business environment are considered to be within the objectives and goal. Figure 16 is a hierarchal diagram which depicts the one way relationship of the criteria applied towards barriers and the two way relationship towards the objective (and eventually the company driver supported goal) via co-creation partners, objective results, and barriers.

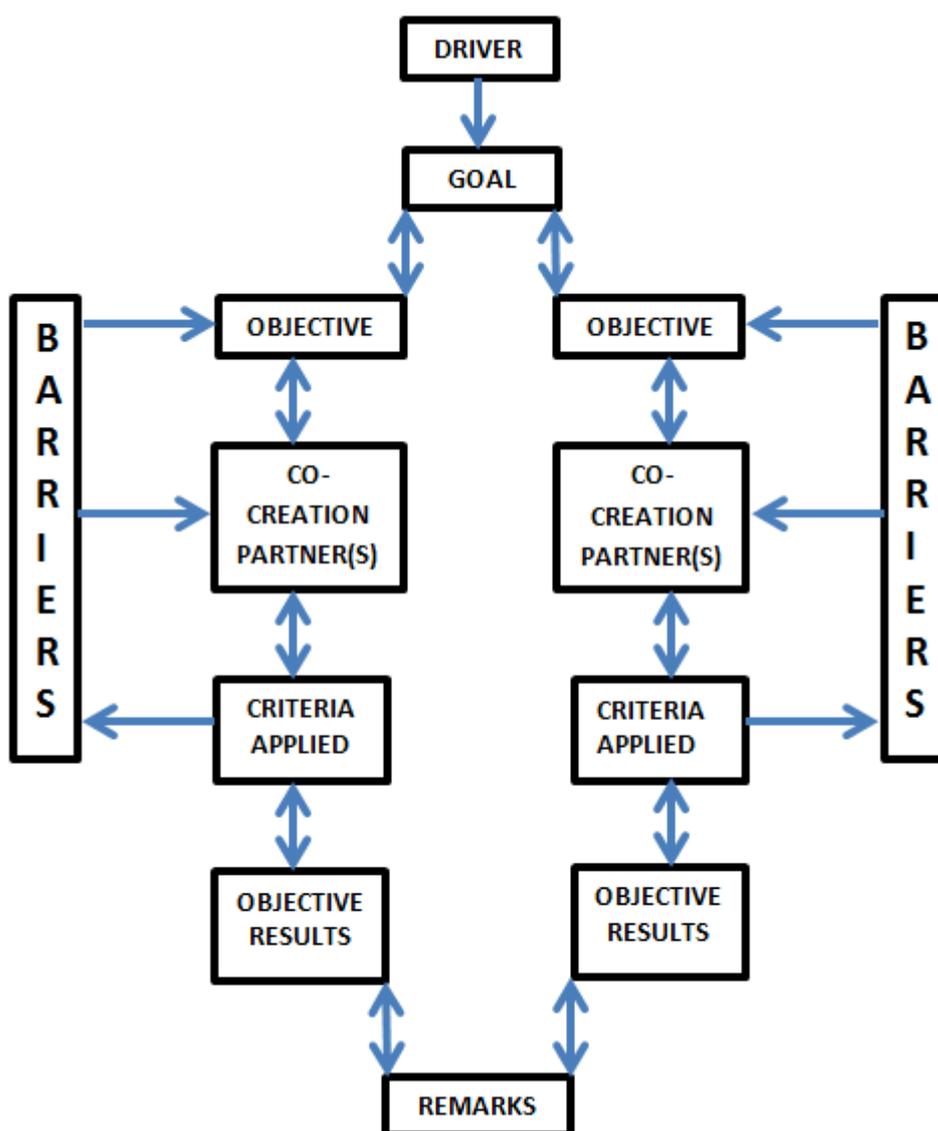


Figure 16: Causal relationship between the criteria applied and the objective

#### 5.4 Relating results and remarks to the goal

The two way causal relationship that exists between the objective results and the criteria applied leads back to the company goal. Events that transpired during the performance of critical success factor tasks organic to the goal supporting objective may force changes in co-creation partners, the type of co-creation criteria required to employ, barriers and even the objective itself. The goal is the one constant remains intact. Remarks can serve to remind the company of key factors pertaining to any element within the evaluated and tracked co-creation process which had a positive or negative effect on goal achievement.

OBJECTIVE RESULTS		REMARKS
ACHIEVED	NOT ACHIEVED	
	Customer churn rate reduced only 3% in 6 months	Were the proper barriers which apply to the churn rate identified? Was the proper co-creation criteria applied? If so, how well? Was a 5% reduction a realistic objective?
LTV increased 5.5% in 6 months		Does LTV data reflect possible sub-segment or niche opportunities? <b>Have we achieved our goal to maximize profits?</b>

**Figure 17: COAM objective results and remarks components**

The objective results in figure 17 shows the quantitative metrics of churn rate and LTV in a company after 6 months. In this example, the churn rate was reduced only 3% instead of the 5% objective. The LTV was increased 0.5% over its objective of 5%. If the company goal in this case was to maximize profits in the frequent user sector, then the company must first review that sector's profit margin and determine whether the goal is achieved, despite the shortcoming of one of its objectives. It may be that the goal was unrealistic and profits were maximized. It may also be that there was a loss of profit margin over the 6 month period in that sector, but an opportunity to increase profit margin in another sector had arisen, therefore, changing both the goal and its objectives.

The remarks section may redirect focus to other components of the COAM tool and propose such questions as:

- Were all barriers identified?
- Were the co-creation efforts applied earnestly?
- Was the proper co-creation criteria focused on?
- Are we involving the right partners?
- Have we reached our goal? Are we any closer?

The company may want to reference reports in the remarks section or simply not use it and let objective results speak for themselves. The remarks section can be used to record valuable information, references and questions that provide insight to the entire co-creation process for a particular case goal. It may be from here that a company can find out what co-creation efforts employed were productive or counterproductive.

#### 5.5 Linking COAM tool components

As the causal relationships between the components have been explained in previous sub-paragraphs in a fragmented order, a holistic depiction of the COAM tool can now be explained to the reader in this sub-paragraph with more clarity. As mentioned earlier in this thesis, the COAM tool is a hybrid that is dashboard in appearance yet incorporates balance scorecard and EFQM concepts. For the sake of added clarity, a simple hypothetical situation involving a fictional medium sized Information Technology (IT) Networks and Service Company that has both B-to-B and B-to-C customer relationships, referred to as 'Company X', will be used as an example. ***\*Note: The fictional company in this example in no way reflects or resembles any CoCo project partner company.\****

In the example depicted in figure 18, based on its customer knowledge driver, Company X has decided to support its strategy by setting a goal of maximizing profits in a capital city area segment of middle income customers. In order to achieve its goal, the company has determined that two objectives would serve as critical success factors. The two objectives in this case are to reduce cus-

customer churn rate by 5% and to increase customer LTV (life-time value) in the following six months. Both of these objectives are quantifiable metrics. According to Gurau and Ranchod (2002, 205), when calculating profit from customers, most methods start from customer LTV. In this case, Company X uses Gurau and Ranchod's method to calculate customer LTV by multiplying the difference between recurring revenues (RR) and recurring costs (RC) by the customer life span (Y) minus customer acquisition costs (AC) for that segment. The simple math formula is:  $LTV = (RR - RC) Y - C$ . (Gurau et.al. 2002, 205)

The customer churn rate metric in figure 18 supports the LTV calculation by providing data to customer life span equation (Y) in the formula above. Company X calculates customer churn rate by dividing the number of customers who discontinue service with the company by its total number of customers in that area. The company has decided that it is necessary to monitor and review the progress of these two objectives every thirty days for the next six months.

The co-creation partners in the figure 18 example represent customers as well as nodes in the value network. In addition to remaining a loyal B to B customer, the example's computer/hardware/software retailer can help Company X to reduce customer churn rate through advertising the company's services, providing access to needed components and software at reasonable costs in exchange for services provided. Both the retailer and Company X could benefit from shared value through co-creating in this manner. Likewise, services can be shared with the technical school in a similar manner as with the retailer in order to facilitate reduction of customer churn rate by being a source of expertise, personnel, advertisement and technical training in addition to remaining a loyal B to B customer. Company X can also focus on shared resources with the private SMEs which are considered to be the primary B to B customers in this example.

The barriers depicted in figure 18 are coded from the list in figure 19. The barrier itself has a corresponding number and a letter code is added to determine the origin of the barrier. The letter 'P' signifies that the barrier is in some way organic to the co-creation partner while an 'F' would signify a barrier being in some way organic to the firm. The methods of coding barriers are limited only

by the imagination of the company. They are done in this fashion for the sake clarity and simplicity in this thesis to facilitate explanation.

The criterion applied corresponds to the co-creation continuum theme and angle the company chooses to focus on in relation to the objective and co-creation partner. The code annotated in the 'criteria applied' section of the COAM tool corresponds to the codes depicted in the Ojasalo et. al. (2011, 8) co-creation continuum shown in figure 13. The first row in the figure 16 example shows that a segment area computer retailer is Company X's co-creation partner in support of an objective to reduce customer churn rate. The barrier in this case (3P) means that the computer retailer in question prioritizes profit over value in its approach to CR (customer relationships). Since Company X feels that this retailer's CR approach has a negative influence on overall customer churn rate, they have decided to focus on working with this retailer in order to get them to focus on concentrating on their customers' value creation processes, which corresponds to the figure 11 code 'A3' in the co-creation continuum. This means that, since the retailer is a B to B customer, Company X is in turn focusing on the customer's customer value creation process.

The objective results shown in the figure 18 example imply that the two objectives may correlate with each other. Although the customer churn rate was reduced on 3%, LTV objectives were accomplished with a 0.5% margin. As mentioned earlier, churn rate is often used in computing customer lifetime value. The questions shown in the example pertaining to the churn rate objective asks if proper criteria were applied, were all barriers were identified and if the objective was realistic. Another question may be: What are the reasons for customer attrition? The reasons could be due to circumstances beyond Company X's control such as death or customer geographic re-location. The results and comments corresponding to the increased LTV objective in the example may lead the company towards a different strategic goal such as the exploration of a niche market. The remarks section in this case also asks Company X to review its current situation in relation to the goal. Is the company any closer to maximizing profits in this sector?

COAM TOOL								
<b>START/END DATES:</b> 01.01.2012-01.06.2012		<b>REVIEW DATES:</b> 01.02.2012/01.03.2012/01.04.2012/01.05.2012						
<b>DRIVER:</b> Customer Knowledge								
GOAL	OBJECTIVES	CO-CREATION PARTNER	BARRIERS	CRITERIA APPLIED	OBJECTIVE RESULTS		REMARKS	
					ACHIEVED	NOT ACHIEVED		
Maximize profits in capital area middle income segment	Reduce customer churn rate 5% within 6 months	Segment area computer/hardware retailer	3 (P)	A3		Customer churn rate only reduced 3% in 6 months	<ul style="list-style-type: none"> <li>Were the proper barriers identified?</li> <li>Was the proper criteria applied? If so, how well?</li> <li>Was the objective realistic?</li> </ul>	
		Segment area technical school	5(P)	B1				
		Customers: Segment area SMEs	2(F)	B2				
	Increase LTV 5% within 6 months	Segment area computer/hardware retailer	4(P)	B3	LTV increased 5.5% in 6 months			<ul style="list-style-type: none"> <li>Does LTV data reflect possible niche market opportunities?</li> <li><i>Are we closer to our goal?</i></li> </ul>
		Segment area technical school	5(F)	B1				
		Customers: Segment area SMEs	2(F)	C1				

Figure 18: Sample: Company X COAM worksheet

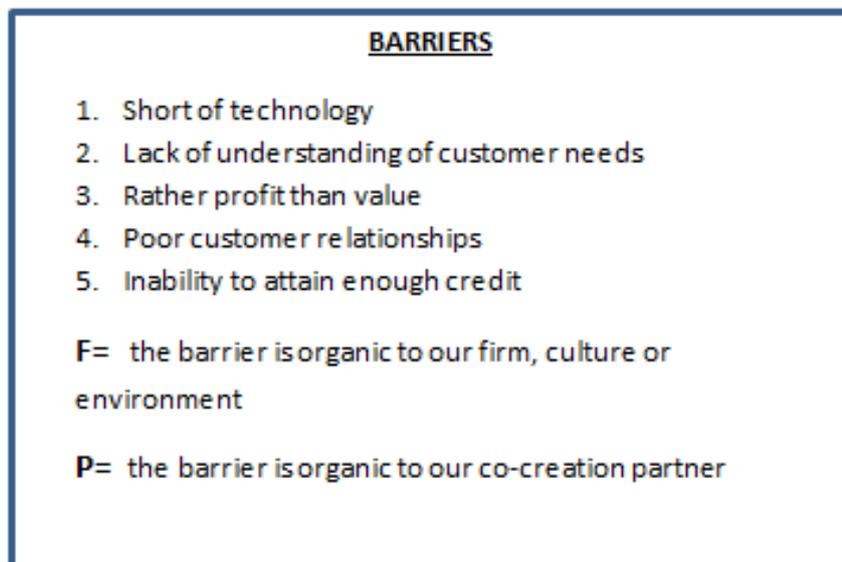


Figure 19: Sample: Company X barrier list

## 6 Development and Testing the Tool

The development and testing of the COAM tool has been conducted in four phases.

### 6.1 Phase 1: research and development

The main tasks of this phase (12 January - 17 April 2012) were to make clear what exactly was being measured, methods for measurement, the matching of components to theory, the definition of terms used, the simplification of the COAM tool, choosing the partner company for testing the tool, and determining the method to test and gather data pertaining to the tool's development.

Research on metrics and the measurement needs of the CoCo project was conducted and the prototype constructed to a point where dashboard, balanced scorecard and the European Foundation for Quality Management approaches were combined with supporting theories for each component of the tool. Krista Keränen, the CoCo project manager, reviewed the prototype's layout, concept and content for the first time. In this phase, it was also determined which partner companies would be focused on in order to test the tool and in what manner it would be presented.

The company that was chosen for testing the tool was one which has had the most consistent project workshop participation and has allowed the CoCo project team the greatest amount of access in comparison to the other project partner companies. It is a communications specialist and service company that provides its customers with comprehensive technical knowledge and optimal personalized communications solutions and has been in existence in the local capital area for approximately fifteen years. The level of English spoken amongst the company leadership and its employees is outstanding and this was determined to facilitate communication.

#### 6.1.1 Planning the data gathering method

The data gathering method for the following phase was planned with the CoCo project leader. Access to this company is considered a sensitive issue and professionalism was of key importance. It was agreed that a presentation of business metrics that ended with a description of the COAM tool would be given followed by the solicitation of comments from the staff of Company A on 17 April at Company A's conference room. It was decided that no predetermined questions be prepared for the Company A staff other than what their opinion of the COAM tool was, if it be useful and what would they suggest for its improvement. A PowerPoint presentation was prepared along with a presentation package for each person scheduled to attend the meeting. The presentation package included a blank COAM worksheet on which presentation participants would write comments and return to the writer. Questions would be recorded by the writer. All data from the comments and questions would be used to further develop the tool and a follow on meeting with Company A would be requested.

#### 6.2 Phase II: data gathering and development

The second phase was during the period of 17 April - 07 May, 2012. During this phase, the COAM tool was presented to Company A on 17 April and to the CoCo project team two days later on 19 April. Several changes were made as a result of comments and questions solicited from the participants of both presentations.

### 6.2.1 'Company A' interview 17 April 2012

The prototype tool was presented to Company A management on 17.4.2012. Present were the CoCo project leader, two of the company's managers, one company Service Desk intern, and two CoCo project interns. The following comments and questions listed in bullet form in bold text were given by those who attended followed by the writer's comments in normal text underneath and the writers' summation of the interview:

- **“The worksheet seems complicated with too many choices.”**

No clear options were discussed for this. Suggestions were made by the senior manager as to assigning weights or color codes for priorities. It had been explained in the presentation that the prioritization of goals and objectives would already be determined by the company prior to annotating them on the COAM tool worksheet. This comment, as it turned out, stemmed from a misunderstanding of what the COAM tool measures.

- **“What levels are conducting evaluation?”**

The CAOM tool is designed for strategic top level management. That does not mean this cannot be delegated to lower levels of management.

- **“Can the COAM tool be reduced to 3-5 columns (components)?”**

The COAM tool worksheet is designed to measure the company's co-creation efforts in accordance with the themes and criteria in component II of the CoCo Tool (The co-creation continuum). These efforts are measured through the results of these efforts with a co-creation partner against any barriers that may exist in the pursuit of completing one or more objectives which support an end goal. That being the case, the writer suggests that, at a minimum, the COAM tool would consist of the following 5 components:

1. Objectives
2. Co-creation partner
3. Barriers
4. Continuum criteria applied
5. Objective results.

The driver and goal components can be retained as tacit knowledge; however, a company may still fulfill a goal even though not all goal-supporting objectives are realized. Listing the goal on the tool may serve the purpose of reminding the company of why particular objectives have been set. Partial goal fulfillment may be a critical measuring tool in the eyes of the company.

Remarks may also be retained, however, by including the three components of driver, goal and remarks, the COAM tool remains relatively streamlined and gives the manager the option to use or not use them.

- **“Theory was clear”**

The presentation started with the explanation of the BSC (balanced scorecard), the TdB (French Tableau de Bord) and the European Foundation for Quality Management (EFQM) business measurement frameworks and how these frameworks were integrated into the COAM tool. The company took particular interest in the conceptual similarities between the EFQM and BSC.

- **“Clear as a process tracking tool”**

The COAM tool is designed to measure and track progress. Tracking can be used in a business as a form of measurement for inventory, sales, taxes, pricing and other business activity (entrepreneur).

- **“It is good for high level management.”**

The COAM tool is designed for strategic levels of management. This does not necessarily mean that lower levels of management cannot use

it. This concept was to be further explored with a follow on interview with the company's help desk team leader.

- **“Different versions of the worksheet should be made available.”**

This comment implies that the layout of the COAM tool can be modified to suit the type of business or level of management using the tool.

#### 6.2.1.1 Interview summary

It was determined from the Company A presentation that the tool must be explained on a more simplified manner. Not all members of the Company A staff were clear as to what the COAM tool was designed to measure. One person from the company and two personnel from the CoCo project team were under the impression that the COAM tool was designed to measure the performance of the company's personnel. This misunderstanding explained the comments made referring to how complicated the tool was and the inquiries as to what it measured and at what level.

One component of the COAM tool was renamed: What is now referred to as “criteria applied” was termed “theme applied” for the Company A presentation. This change was made in order to reflect the Ojasalo and Keranen's co-creation continuum terminology more accurately.

Simplification of the COAM tool presentation involved creating a hypothetical example that was less ambitious than what was presented to the Company A staff. Less time would be devoted to metrics' theory and more time focused on explanations of what would be evaluated in accordance with the COAM tool components. The co-creation continuum with its three angles and each angle's corresponding five criteria would require accurate but brief explanation prior to describing the COAM tool components, their causal relationships and supporting theories.

Company A agreed to test the COAM tool with a Help Desk team manager who was present at the focus group. A follow-on meeting with the company's help desk manager was scheduled for 8 May 2102.

### 6.2.2 Focus group presentation 19 April 2012

The main purpose of this presentation to the CoCo team focus group was to implement the corrections made to the COAM tool from the comments taken from the Company A presentation two days prior. The goal was to get the focus group to understand what the tool evaluates and to solicit ideas of how the tool can be developed. Most of the individuals in the focus group were familiar with the CoCo tool. This facilitated understanding to a certain degree, but the goal was also to get those who were not so familiar with the CoCo tool to grasp the COAM tool concept.

The presentation began with each individual present being given a blank COAM tool worksheet and asked to make comments on the reverse side of the sheet. A hypothetical situation of a child's lemonade stand to be used as an example was explained. A power point presentation began with defining the stand owner's strategy and drivers. A goal was defined by rephrasing a question pertaining to one of the lemonade stand owner's drivers. Several objectives were listed as a means to achieve the goal as were corresponding barriers and the co-creation partners the owner would need to create a relationship with. The co-creation continuum was briefly explained as a refresher for the focus group and applied criteria were selected to correspond with each barrier and co-creation partner. The presentation was designed for simplicity and the hypothetical results were positive in order to show how employment of continuum criteria can be measured. The presentation lasted 20 minutes prior to questions being fielded.

The following is a bulleted list of the comments and questions from the six member of the CoCo project team who attended the presentation including the writer's summary of the presentation:

- **Does the COAM tool measure results or the co-creation efforts?**

The main purpose is to measure co-creation efforts. Results are put in place to measure the co-creation effort (employment of continuum

criteria). The COAM tool is a dashboard tool for management to track co-creation efforts and measure their effectiveness.

- **Why is a driver listed on the COAM tool? Is it necessary?**

The concept is that the driver, goal and barriers create a motivation to co-create. From that motivation to co-create, objectives and co-creation partners are decided upon or chosen by the company. Drivers do not necessarily need to be listed on the worksheet; they can remain as tacit knowledge at the manager's discretion, but can also serve as a motivational reminder to the manager when reviewing the COAM tool.

- **Are these metrics? How is this being measured?**

The COAM tool is a systematic approach based on the BSC, TdB and EFQM designed to turn a company's strategy and drivers into goals and quantifiable objectives through employment of the co-creation approach. Any number of quantifiable metrics can be used as key success factors when determining objectives. If a goal, for example, is to maximize profits, supporting quantitative objectives could be to increase return on investments or assets, reducing the churn rate or the improvement of throughput times. Qualitative objectives supporting the same goal could be to increase employee awareness of customer needs or increasing the product knowledge of company personnel. In the long run, co-creation efforts are measured by results in relation to the company goal.

- **What are the causal relationships of the components?**

This question led to the description of the causal relationships discussed in paragraph 5 of this thesis.

- **How are results measured?**

A modification was made to the COAM tool to answer this question. Underneath the 'objective results' column two sub columns were added; 'achieved' and 'not achieved', respectively. The underlying question, however, whether a particular objective was achieved, or not, is: "Have we achieved, or are we closer to our goal?" Negative results could lead the company to question if its co-creation efforts were appropriately applied, if it had focused on the right set of objectives, if it had recognized all barriers, if it had chosen the most suitable co-creation partners, or any combination of these elements thereof.

- **What are the differences between goals and objectives?**

This question led to the writer researching definitions of the two terms. The definitions used in this thesis for goals and objectives are in paragraphs 4.3 and 4.4.1 respectively.

"Goals and objectives are often used interchangeably, but the main difference comes in their level of concreteness. Goals are long-term aims that you want to accomplish. Objectives are concrete attainments that can be achieved by following a certain number of steps. Goals are hard to quantify or put in a timeline, but objectives should be given a timeline to be more effective. Objectives are set in order to reach a goal" (DifferenceBetween.net).

It is not uncommon that some experts define objectives synonymous with goals. The Harvard Manage Mentor does such a thing and uses the term CSF to describe what some experts call an objective (Performance measurement):

- Objective: Goals that a group, unit, or company wants to accomplish in order to improve performance. Objectives may be related to strategy, to customer service, to business processes, and so forth.

- Critical Success Factor (CSF): The activities a group, unit, or company must carry out to achieve its objectives. See also objectives.

#### 6.2.2.1 Presentation summary

The questions and comments from this focus group were instrumental in two modifications made to the COAM tool. The first modification was the change of terminology from “co-creation theme employed” to “criteria applied”. The second modification was the placing of the sub-components “achieved” and “not achieved” under the objective results heading.

Changes were also made to the presentation and communication style the writer would use in order to facilitate explanation and clear understanding of the COAM tool and its purpose. Making the listener understand exactly where metrics are applied and tracked with this tool are critical factors in a presentation if the COAM tool’s use is to be tested and evaluated.

### 6.3 Phase III: Testing the COAM tool

The third phase of this thesis began on 08 May 2012 with an interview of Company A’s 1LHD (first line help desk) team leader. There are two help desk teams at Company A. 1LHD is responsible for receiving customer service requests that include: service complaints, support inquiries and change of service requests. 1LHD is composed of 8 - 10 members, electronically records customer service requests and conducts first echelon corrective service. Those service requests that require higher technical echelons of corrective action are forwarded to 2LHD (second line help desk).

#### 6.3.1 Service Help Desk Team Leader interview

On 08 May 2012 an interview was conducted with the Company A 1LHD team leader. The team leader has been with the company for less than one year. The interview was conducted in English in the company’s conference room

and lasted three and one half hours. The writer and team leader were the only personnel present.

The purpose of the interview was to gain insight to 1LHD team leader's measurement needs, determine a goal, supporting objectives and to generate co-creation ideas. The team leader described the overall process function 1LHD, the company strategy and measurement needs for the first line team.

Two days prior to the interview, the 1LHD team leader sent the writer a power point presentation depicting company and team strategy, mission statement, a 1LHD process diagram, and measurement goals written in Finnish. The writer has a good working knowledge of the Finnish language which, combined with the team leader's excellent English skills, facilitated communication between interviewer and interviewee.

#### 6.3.1.1 Company vision and strategy

Company A's vision is to be one of the best IT (information technology) companies in the nation and to be nationally recognized for its high quality staff and operational performance. The strategy described by the team leader was profitable customer-oriented growth through active networking in B-to-B projects. Company A's investment decision making strategy is to pay attention to competitors, customer needs and evolving technology. Company service strategy corresponds to customer needs and the company's quality standards. This explanation of company strategy formed a good basis from which to ask questions as the interview progressed.

#### 6.3.1.2 Company drivers

Strategy supporting drivers are the personnel's technical proficiency, experience, customer knowledge and the company's location. The company has been in existence since 1997. (Kivekäs, interview 8 May 2012)

### 6.3.1.3 Help Desk measurement needs

The measurement needs that were discussed were a mixture of tangible and intangible factors suggesting quantitative and qualitative metric objectives respectively. The following is a list, in order of priority, of what the team leader would like to have measured: (Kivekäs, interview 8 May 2012)

1. Customer satisfaction: Tailored to customer type at a minimum of twice per year.
2. Volume: Statistics classified by service request (ticket type)
3. Process functionality: Order - to - service completion throughput times and quality
4. Employee development
5. Employee satisfaction

The team leader mentioned that customer and employee satisfaction were the main concerns, but prioritized measuring volume and process measurements over employee development and satisfaction in order to get a base line from which to survey the employee dynamics. (Kivekäs, interview 8 May 2012)

When asked by the interviewer the reason for prioritizing a tailored measurement of customer satisfaction, the team leader replied that knowledge of customer needs, according to volume of customer per type, would mandate what skills were necessary for employees to develop, the distribution of work load, and the size of work force necessary for growth. Based on the team leader's experience with the company, workloads have varied according to season. The team leader stated that Company A conducts an annual customer survey and commented that a more tailored semiannual survey would be more ideal in providing Company A with the customer centric knowledge that would facilitate the firm's competitiveness in its sector (Kivekäs, interview 8 May 2012). This comment suggested that the 1LHD team leader's strategic thinking in terms of the value creation process is to concentrate on the customer's value creation process

which corresponds to the co-creation criteria A3 of the co-creation continuum (see figure 13).

#### 6.3.1.4 Help Desk barriers

When asked by the interviewer to describe barriers, the reply suggested that those encountered as the 1LHD team leader were organic to the company. The main barriers described by the team leader were: (Kivekäs, interview 8 May 2012)

1. Employees focus more on profit than value
2. Silo effect between first and second echelon held desk teams
3. Questionable employee initiative
4. Customer data (for historical service requests) process needs updating

#### 6.3.1.5 Summary of ILHD team leader interview

It was after discussing barriers, measurement needs, company strategy and company vision that the interviewer and interviewee were able to direct the conversation towards a goal and supporting objectives. Beginning the interview by asking “What is your goal?” without first discussing strategy and vision may have resulted in an answer with a much more limited scope than what was eventually received from the interviewee. When the interviewee was asked the reason for wanting to tailor-measure customer needs and satisfaction, the reply was, in general, to facilitate maintenance of employee skill demands, the distribution of work load and to provide better service to the customer. When asked the reason for wanting to facilitate employee skills, workload management and provide better service, the reply was to better market Company A’s services through referrals and to facilitate company growth nationally (Kivekäs, interview 8 May 2012). This reply showed a clear relation to the company strategy and vision described by the team leader earlier in the interview and supports Kaplan and Norton’s BSC concept of measuring business performance based on a firm’s strategy (Harvard Business Review).

The team leader's goal for 1LHD was eventually defined as customer satisfaction. From that goal, a number of objectives were discussed as critical success factors enabling goal achievement. A brainstorming session began which for which the purpose was to uncover objectives, barriers and co-creation partners. Figure 20 on the following page depicts the highlights of the brainstorm session. (Kivekäs, interview 8 May 2012)

The team leader felt that a survey of current customers who had submitted work requests to be a realistic start and remarked that there is a challenge gathering historical data from work requests due to the need to upgrade the format and the lack of employee accuracy in recording all required information on each work request. Unless overcome, this would make researching historical data too time consuming and hinder the team leader's performance of regular duties. (Kivekäs, interview 8 May 2012)

The interview terminated with the agreement that the writer would review interview notes and complete a COAM tool with component information reflecting the team leader's goal with suggestions for objectives, co-creation partners and criteria to apply. This completed COAM tool is to be sent to the team leader along with an interview synopsis to both ensure there are no misunderstandings and to follow up on 1LHD's business measurement goal. (Kivekäs, interview 8 May 2012)

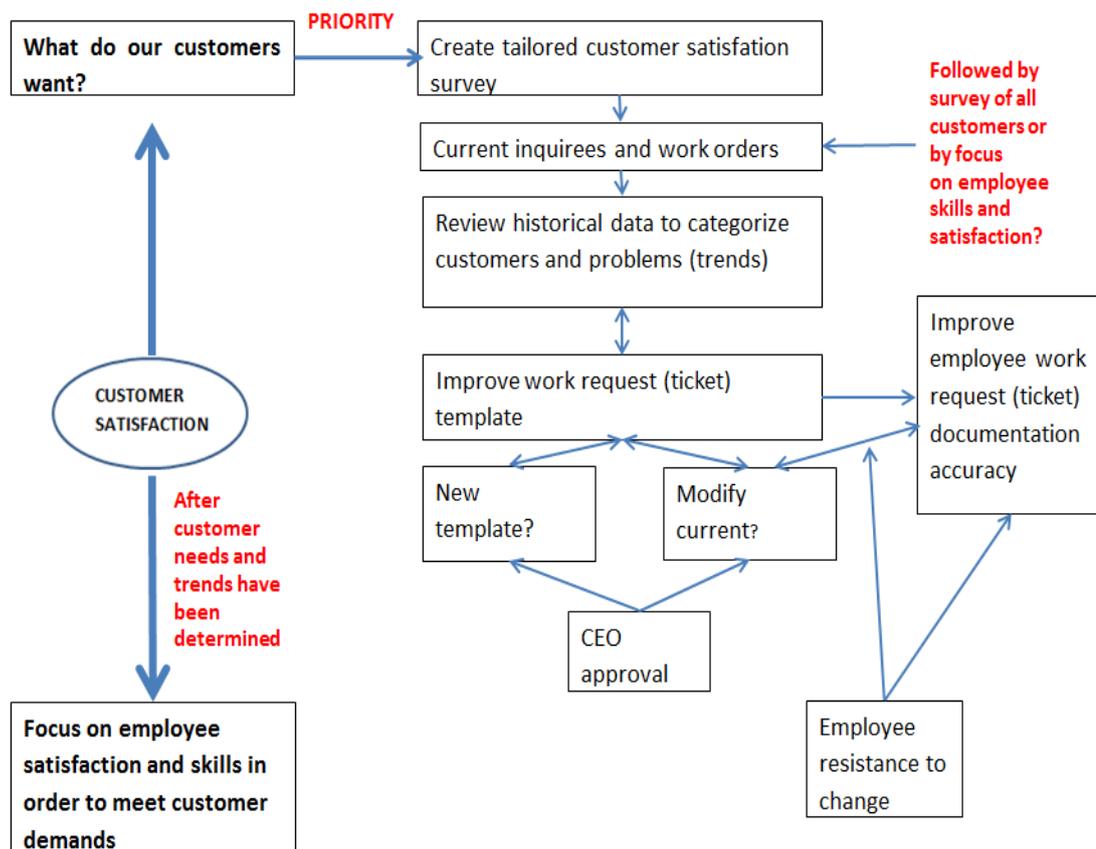


Figure 20: 1LHD Goal Brainstorming Session

### 6.3.2 Suggested Help Desk COAM worksheet

The suggested worksheet in figure 21 was sent back to the Company A 1LHD team leader on 11 May 2012 for review and comments. It was unrealistic to put start, end or review dates. Likewise, it is impossible to fill in objective results or remarks. Once the team leader has reviewed this worksheet, another meeting may be set up with the writer. There is no guarantee of such a follow on person - to - person meeting, being that future correspondence may take place electronically. Company A managers have been invited to the 22 - 23 May 2012 Co- creation camp being hosted by Laurea U.A.S. Leppävaara. The COAM tool will be presented in a workshop during the camp and follow up remarks from Company a will be solicited.

The worksheet in figure 21 is a true representation of a real world company. The figure also depicts that the COAM tool can be a useful dashboard for middle level management. Where a top level management goal may be to in-

crease customer satisfaction, with a customer survey as a critical success factor objective, creating that survey can translate into a goal for a subordinate manager with its own supporting objectives.

In this case, figure 20 depicted a brain storming session that was based on achieving customer satisfaction. The question of what the customer wants from the help desk team would be best answered by gathering data from a tailored survey. In order to create a survey that would best serve the help desk's needs, historical data should be reviewed. In order to review this historical data accurately and within a reasonable amount of time, a work order template to support information access must be designed or purchased because the current one is not sufficient for this purpose. Reviewing the historical data can give the team leader an idea of service problem trends, customer type and service throughput times. This is information that would help in designing a survey that would best uncover true customer needs. There are internal value networks with which the team leader must co-create in order to achieve these objectives, such as the Company CEO, 1LHD team employees and the 2LHD team leader. The barriers described by the team leader in the interview are also depicted in figure 21. Placing the barriers and criteria applied in figure 21 was based on the writer's understanding from data gathered from the 09 May interview. The team leader who was interviewed may not agree with these interpretations and decide to change them.

COAM TOOL							
Start - End Dates: (???? - ????)			Review Dates:				
DRIVER: technical expertise							
GOAL	OBJECTIVES	CO-CREATION PARTNER	BARRIERS	CRITERIA APPLIED	OBJECTIVE RESULTS		REMARKS
					ACHIEVED	NOT ACHIEVED	
Conduct a tailored customer survey to uncover needs in order to better serve and retain customers	Review historical data from work orders in orderr to categorize and correlate customers with problems and trends (within 3 months)	Company CEO	4	A4			
		1st Line Help Desk employees	3	A3			
		Customers	1	A2			
Update the current work order templates to allow accurate and quick access to customer inquiree historical data (within 3 months)		1st Line Help Desk employees	4	A4			
		2nd line Help Desk employees	2	A5			
		Company CEO	4	A4			

BARRIERS
1. Employees prioritize profit over customer value
2. Silo effect between first and second line help desk employees
3. Employee initiative
4. Employee resistance to change
5. Work order template does not support quick and accurate access to historical data

Figure 21: Suggested Help Desk COAM tool with barriers

## 7 Conclusion and recommendations

### 7.1 Conclusion

The solution to the problem of devising a method to measure a company's co-creation effort is answered in relation to the co-creation themes and criteria published in Ojasalo and Keränen's (2011, 7-9) co-creation continuum. Monitoring and evaluating these efforts is contingent upon having goal supporting objectives which require co-creation partners and any of a number of possible qualitative or quantitative metrics. Examples of metrics that can be used in the objectives component of the COAM tool are explained and shown in examples. There are many possibilities and choices as far as the types of metrics a manager may choose and it would be impossible to list or describe them all. Being that measurement is an ongoing dynamic process, causal relationships between each component of the tool should be understood by the reader and are explained with supporting theories in this thesis.

The COAM tool can be useful for top level strategic management as well as middle level operational management. The case company interviewed made early comments that the COAM tool was good for top level management but has agreed to test this tool with middle level management. If the company in question were a manufacturer and not a service company, the tool may not be as useful for the middle level management; especially in the case of an assembly line or similar process. Any level of management that deals with customers can effectively track and evaluate co-creation efforts by employing the COAM tool.

### 7.2 Recommendations

The COAM tool that has been designed is a prototype that has yet to be fully tested. It has recently been submitted to a case company for testing and further development. Testing and developing a tool to measure co-creation efforts can be a process that lasts one year or more. It is recommended that further research be conducted over the next two years in order to gain more case companies and determine at what levels and perhaps business sectors benefit most from employment of the measurement tool. It must be taken into ac-

count that a case company is attempting to conduct business activity based on a co-creation paradigm. Those companies who operate along more traditional business models with no desire to change focus towards co-creation efforts would not be the best choice for future case companies.

If different versions of the COAM tool are to be developed, follow up research with the thesis case company and others would be advisable by the writer. Follow up on the case company described in this thesis can facilitate access to future case companies if the research is conducted in a professional manner.

## 8 Theoretical linkage

The main theoretical base for this thesis was that of business measurement frameworks. Theory from this research led to recognizing that a business can best measure what is linked to its strategy. Different frameworks (BSC, TdB & EFQM) were studied from the viewpoint of different authors and a hybrid type dashboard was conceived to best suit the writer's opinion of what would best suit the purpose of this thesis. Theories of goals and objectives were established from articles by three separate authors who explained their theories of drivers, barriers and goals. Metric theories were taken from various sources and linked to objectives.

## 9 Final comments

A lot of research was required in order to complete this task within the relatively small amount of time allotted. At first it did not seem possible to write a thesis based on this task within the time constraints. With support from the project manager and access to a partner company, it became apparent that it could be done with some extra effort. The project manager and scientific leader had established a trusting, professional relationship with partner companies before it was determined that a tool to measure a company's co-creation efforts would be necessary. These relationships began before I was hired as a research intern for this project in September 2011. Without this access and support, it could have taken more than a year to complete this task and write this thesis. I am pleased with the outcome of this thesis. I feel that a prototype tool has been created that can help a manager track and evaluate co-creation efforts. I also feel that

a topic for a follow on thesis has been created by my work. Maintaining a partner relationship with the case company described in this thesis and developing the same type of relationship with other firms could enhance the co-creation phenomenon which TEKES supports through the CoCo project while simultaneously developing a tool to measure efforts.

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