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Improving Customer Service Through Cobit 4.1 Approach: A Case Study of it Organization in Indonesia

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Abstract: This study aims to evaluate the problems that occurred on banking solution business unit directorate Finance and Banking PT Telkomsigma. One of the problems that occurs is a buildup of Customer Request (CR) and Error Complain (EC). There are two indications of the cause of the problem namely the buildup of disfluencies process of handling and capability/adequacy of staff who deal with the problems of CR and EC. Through, statistical tool, the results of hypothesis testing showed no significant correlation between CR and EC buildup with disfluencies process of handling and capability/adequacy of staff. Mapping through maturity using COBIT framework is seen that there are 3 control objective (DS7-Manage IT Human Resource, EI4-Enable Operation and Use and DS8 Manage Service Desk and Incidents) that affect the smooth process of handling CR and EC are indicated by rating lowest maturity level (repeatable but intuitive) (MAA).

Key words: Banking solution, finance and banking, customer request, error complain, control objective, maturity level

INTRODUCTION

PT Sigma Cipta Caraka (Telkomsigma) which was established in 1987 has became one of the largest ICT business partnerof the Bank industry in Indonesia. The services and products includes Core Banking Application System and supporting applications electronic banking (e-Banking) such as ATM, card management, SMS banking, internet banking, service EDC (Electronic Data Capture), Host to host, reporting to Central Bank of Indonesia (here in after referred to as banking solution).

Telkomsigma currently has 31 banking clients who use the service banking solution. The type of telkomsigma's services are as follow:

- Services on license application system Core banking Alpha BITS along with maintenance services
- IT operations management of application include with development system Core banking Alpha BITS

Both services are handled by one of the business unit business unit banking solution (hereinafter abbreviated as BU-BAS) in the directorate of finance and banking solution (hereinafter abbreviated FnB) which is one of the business units in telkomsigma. The client's telkomsigma currently consists of 22 banks use Core Banking Alpha BITS and 16 banks use supporting application (surounding system). To handling applications services handled by the 157 staff at various levels.

In a business trip, the service still has not been maximized given to the needs of the client, it is shown data on the number of customer request (hereinafter referred to as CR) and the number of errors complaint (hereinafter referred to as EC) is still quite a lot that is not completed in accordance with the needs of the client where CR and EC per month of data show compassion m no >150 (one hundreds) pendings of CR as shown in Fig. 1.

According to the survey results, there are somethings need to be done to improve performance in: help desk responsiveness, the ability to deliver service timely and accurately, need to add more personnel and slow in complaint handling.

One key to the implementation of business processes in accordance with business goals is to implement ICT governance mechanisms. It is required by an organization is no exception telkomsigma. Governance of ICT management should involve so as to provide a guarantee for services with available resources. In any business organization there is a section that focuses on the business activities of so-called enterprise governance and parts that focus on data management called the governance of ICT (IGI, 2007).

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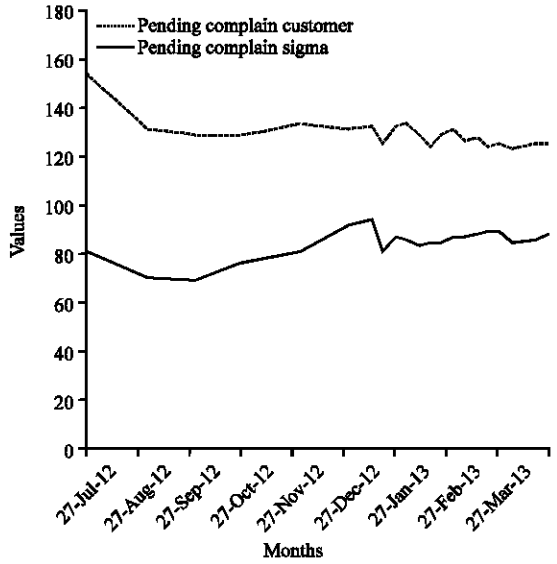

Fig. 1: Customer complaints chart number Q2-2012 to Q1-2013 (Monthly Report BU-BAS directorate FnB on Director meeting on May 23, 2013)

Implementation of governance of ICT as a tool to support business activities, require the management of resources such as facilities, finance, material and personnel. Involvement of a variety of resources such as: data, facilities, application systems, technology and human interaction that indicate a complex pattern. Management of these resources using standard governance of ICT, integrated from the entire organization and arrangements are the responsibility of the board and executive management which includes patterns and their leadership structures and processes of the organization. Governance of ICT's goal is to ensure that an organization's information technology can be aligned and support the achievement of the organization's strategies and objectives (IGI, 2007).

Role of ICT is increasingly strategic and functional as well as issues related to the right decisions and tactics ICT has led to a broader understanding of the governance of ICT. The company has put governance of ICT as an "integral part of corporate governance" by setting and implementing processes, structures and relational mechanisms within the organization that allows business and IT people to execute their responsibilities in support of IT business alignment and value creation business of IT-enabled business investments (Wilkin and Chenhall, 2010).

In this research, researcher tries to evaluate the performance of the business unit banking solution FnB telkomsigma directorate, map precisely the problem performance of ICT, then find the right solution so that services can be improved and consistent. One method of measurement through testing technique management and governance of ICT is to use the COBIT 4.1 framework (Control Objectives for Information and Related Technology, Version 4.1).

Researcher choose COBIT 4.1 framework as governance of ICT to be discussed in this study as part of the mapping solutions to problems in BU-BAS FnB-Telkomsigma. COBIT 4.1 framework is used in order to process the measurement standard and has been recognized as one of the foundation framework that is international in its implementation. COBIT was developed by ISACA (the Information Systems Audit and Control Association) is a proper framework to build a standard model in the implementation of the above measurement process.

Before evaluating the performance through the ICT governance, it is seen that the main problem in the handling of client complaints about CR and EC are worsened performance quality of service due to the increasing number of CR and EC that can not be resolved in a timely manner.

Completion of CR and EC depends on the smooth completion of the process and the capability and adequacy of employees in solving problem of CR and EC clients. Basically, when the client trustthe company's commitment in handling the issue a timely manner. Given a smooth process and resource capability to be able to handling CR and EC, the case study is intended to analyze the extent to which that process smooth and adequacy/capabilities staff that can solve the buildup of settlement CR and EC. This study is designed to answer the following questions:

- What the impact of the process to ensure the smooth completion of CR and EC?
- How two independent variables (staff capability and adequacy) able to complete the stacking number of CR and EC?

Literatu rereview

Informations system: Information systems can be simply defined as a computer-based system consists of software, hardware and brain ware that provides information for multiple users with similar needs (Laudon and Laudon, 2009). Other understanding in the information system is to collect, process, store, analyze and distribute information for a particular purpose (Turban and Linda, 2011). Information system is unitary elements relate to each other to form a single unit to integrate the data, process and store and distribute information which will support the creation decision.

In reaching, the goal of improving the effectiveness and efficiency of the implementation of the system required information. Information system capabilities and characteristics of the organization, systems, people and the development and implementation methodologies together determine the extent to which that goal is achieved (Laudon and Laudon, 2010).

Services quality: As organizations become heavily involved in IS adoption, management is more likely to pay attention to factors that would enable them to properly maintain the quality of the IS. The supporters of IS have pointed out how researchers have spent less time on technology growth and more time on the societal framework in which information technologies are intended and used (Sidorova *et al*., 2008).

United States Department of Commerce, The Malcolm Baldridge National Quality Award in 1993, the award criteria state: quality is judged by the customer. All product and service attributes that contribute value to the customer and lead to customer satisfaction and preference must be the foundation of a company's value system. Value, satisfaction and preference may be influenced by many factors throughout the customer's overall purchase, ownership and service experiences. These factors include the company's relationship with customers that help to build trust, confidence and loyalty.

Customer satisfaction with service recovery is an actual experience where customer service for recovery better than expected and perceived psychological evaluation. To confirm the customer's expectations for service recovery is an important fundamental to learn and set a recovery strategy for the company's services (Boshoff and Leong, 1998).

Thus, the needs of the client to be an important benchmark for a company to improve its performance. With the comprehensive evaluation is expected to provide a way out for companies fatherly improve service. If the client feels that they have the added benefit of their relationship with a company, the level of their satisfaction with the service providers will increase (Beatty *et al*., 1996).

IT governance: Governance (good governance) is the basic framework that should be in place for Information systems (ICT) strategic plan and strategic planning process to be successful (Cassidy, 2005). Governance help provide decision-making and accountability framework for the effective management of the use of ICT. There are many components of the governance of ICT but the basic purpose of governance is to identify what decisions will be made by whom and to determine how the activity will be monitored against the plan are made.

Governance of ICT is the responsibility of the board of directors and top management. It is an integral part of the corporate governance consists of the leadership in the organizational structure. Management in an organization must ensure that the process of ICT sustain organizational strategy and goals (IGI, 2007).

ITGI defines governance of ICT is the responsibility of the executive and board of directors that consists of the leadership, organizational structures. Governance of ICT is part of corporate governance where leaders (executives and board of directors) of the company to ensure the performance of the role of ICT can be run in line with business objectives. Information technology investments can run effective and can support and expand the organization's strategies and objectives (IGI, 2007).

The framework of the control objectives management guidelines maturity models, explained that the governance of ICT has 5 main focus and everything is driven by stakeholder value. Two of them are the result: value delivery and risk management, three of which are the driving strategic alignment, resources management and performance measurement (IGI, 2007; Grembergen *et al*., 2007).

Governance of ICT is an ongoing life cycle where companies can launch from anywhere. But usually, the company started of with the company strategy and penyelarasannya (ICT strategic alignment). Then the implementation that gives the value of the strategy launched (ICT value delivery) and address the need to mitigate risk (risk management). At certain intervals (with continuous recommendations) strategies need to be monitored and the results are measured, reported and acted upon (performance measurement). Last annual general strategy reevaluated and adjusted if necessary (De Haes and Grembergen, 2000).

COBIT provides guidance broadly for purposes of management and control of the application of ICT in a company, so as to illustrate the extent to which the implementation of ICT to keep pace with business objectives. COBIT accommodate the translation by providing a process model within four domains, namely, Plan and Organize (PO), Acquire and Implement (AI), Deliver and Support (DS) and Monitor and Evaluate (ME). The fourth domain has processes all of which amounted to 34 which serves to monitor every segment of the elements of the ICT (IGI, 2007).

Debreceny and Gray (2009) in the journal IT governance and process maturity, revealing where COBIT admit that meet company objectives requires a systematic development of the ability to deliver results in every process of ICT.

COBIT as a model evaluation system for reliable information more direct or COBIT helps to define what should be done (Heschl and Gary, 2008). Whereas the COBIT standards includes:

- Support good governance
- Defining forms of care/services
- To verify the ability of providers
- Help facilitate continuous improvements

The journal "Exploring COBIT Process for ITG in Saudi Organization" Musa (2009) explain that COBIT is a collection of documentation for IT governance best practices that can help auditors, management and the user to bridge the gap between business risks, control needs and technicalproblems issues.

COBIT control objectives: According to IGI (2007), each domain is clarified and elaborated within 34 objective is expected to be a reference to COBIT. Referring journal Gremberger *et al.* (2007), linking business goals to IT Goals and COBIT processes, evaluation carried out on the BU-BAS Telkomsigma, there are fourteen control objectives, namely.

Plan and Organize (PO):
- PO1: Define a strategic IT plan
- P04: Define the IT organization and relationships
- P07: Manage human resources
- P08: Ensure compliance with external requirements
- P10: Manage projects

Acquire and implement:
- AI4: Enable operation and use
- AI6: Manage changes

Deliver and support:
- DS3: Manage performance and capacity
- DS4: Ensure continuous service
- DS6: Identify and allocate costs
- DS8: Manage service desk and incidents
- DS10: Manage problems
- DS13: Manage operations

Monitor and evaluate:
- ME1: Monitor and evaluate IT performance

COBIT Maturity Model: Maturity Model is a method to measure the level of development management process which is meant to measure the extent to which the management capabilities (IGI, 2007; Grembergen and Haes, 2008b).

Tuttle and Vandervelde (2007), states that by applying a measurement maturity management model allows the company to determine in which areas of quality control in the company's internal control process and then evaluate the condition. COBIT 4.1 Maturity Model no threshold models, models COBIT maturity level will not increase when the level of the terms and conditions below are not met first.

Key goal indicators: Key Goal Indicators (KGI) is an indicator of the ultimate goal which represents the purpose of the process, the size of what is to be achieved. This is a measurable indicator of the process of achieving goals, often defined as a target to achieve. For comparison, key performance indicators is a measure of how well the process performance. KGI states points to be achieved by the process in the end. Whether or not KGI stated success measurably process. By comparison, key performance indicators is a measurement of "how well" the process that is being carried out which will give you an estimate to the achievement of the objectives (IGI, 2008; Grembergen and Haes, 2008a). How the business and IT objectives and measures related?

Key performance indicators: Key performance indicators are measurements that provide an overview of how well the performance management of the process of ICT to support the achievement of its objectives. Based on the principle of the balanced business scorecard, the relationship between key performance indicators and key goal indicators, parameter (Grembergen and Haes, 2008a).

KPIs are measures that tell management that the process of ICT is achieving business needs to monitor the performance of the ICT. Establish principles Balance Score Card (BSC), the relationship between KPI and KGI are as follows: KPI indicator of short, focused and measurable performance factors of the supporting IT processes which indicates how well the process that allows the company's objectives will be achieved, (Grembergen and Haes, 2008a).

MATERIALS AND METHODS

The methodology used in this research is to evaluate the performance of the ICT solution BU-banking, finance and banking directorate Telkomsigma through governance/IT frameworks to COBIT 4.1.

Based on performance conditions contained in the BU-banking solution FnB, then the researchers to identify

what could be a problem in the company. Understanding of the results of the core problems in the company becomes the basis for a recommendation that could be solutions to problems.

Measuring variables:

- According Clason and Dormody (2010), proposed a Likert scale summated forth assessment of survey respondent's attitudes. Individual items in Likert's scale sample had five response alternatives: strongly approve, approve, undecided, disapprove and strongly disapprove
- Measure validity and reliability, aims to test the grain the questions contained in a questionnaire
- Perform regression testing to know how the relationship between the level of maturity of the information system and the quality of information generated by user satisfaction

Aspects that determine the management and handling of CR EC will be stored in the independent variable X while buildup leading to CR and EC on the dependent variable Y as shown in Table 1. Because, this research will only learn the aspects of the handling of CR and EC piling on two aspects of the performance of the process smooth and presence/reliability staff in the handling of CR and EC (Table 1).

There were 34 respondents who answered the questionnaire relating to the use of BU-BAS services directorate FnB-Telkomsigma. Questionnaire was designed to divide two parts, the left is the questionnaire for handling CR and EC and the right part for the completion of CR and ER levels. The first section contains questions on general information about the customer, part consists of questions on a variety of factors such as the speed of the process and the ability of staff handling. Respondents were asked to assess the handling of CR and EC based on a five-point Likert scale ranging from most satisfied to least satisfied. To carry out the study in a way that is more accurate and easier, researchers used a convenience sampling method. Analysis and interpretation has been drawn with the help of a variety of statistical techniques such as percentage, mean and standard deviation and coefficient of variation.

To examine the correlation between the 3 independent variables and 1 dependent variable. Statistical analysis method used is the statistical linear regression models.

Table 1: Variable X and Y handling CR and EC

X: handling CR and EC	Y: pending CR andEC
X1: process smoothness	Y1: pilling CR and EC
X2: reliability adequacy staff	

RESULTS AND DISCUSSION

Results of data processing: After all the questionnaires received, then the data can be quantified to enter into SPSS application. Results from SPSS are as follows.

Hypothesis test results-correlation analysis: There is a positive effect between process smooth handling of the CR and EC CR and EC buildup problems. Person Correlation = 0.685** and Sig. (2 tailed) = 0.000. Strong enough but there are two stars with Sig. (2-tailed) = 0.000 showed a very significant effect, then H_1 is accepted (Table 2).

There is a positive effect between the adequacy/staff skills against CR and EC buildup problems. Person Correlation = 0931** and Sig. (2 tailed) = 0.000. Strong correlation level, indicating a very significant impact, then H_2 is accepted (Table 3).

Identify business goals: As for mapping purposes with business objectives telkomsigma to business goals COBIT perspective are as follows.

With mapping COBIT 4.1 is aligned with business objectives into four balanced scored card perspectives, it can be seen that the business goals are spread evenly (Table 4).

Table 2: Results of correlation analysis to smooth the process of accumulation of CR and ER issues

Descriptive statistics	Mean	SD	N
Kelancaran_X1	2.8980	0.69133	34
Pending_Y	3.0882	0.82366	34
Correslations	**Kelancaran_X1**		**Pending_Y**
Kelancaran_X1			
Pearson correlation	1		0.685
Sig. (2-tailed)	-		0.000
N	34		34.000
Satisfaction_Y			
Pearson correlation	0.685**		1.000
Sig. (2-tailed)	0.000		-
N	34		34.000

Table 3: Results of correlation analysis skills/adequacy of staff to the stacking problem CR and ER

Descriptive statistics	Mean	SD	N
Staff_X2	2.9281	0.73628	34
Pending_Y	3.0882	0.82366	34
Correslations	**Staff_X2**		**Pending_Y**
Staff_X2			
Pearson correlation	1		0.931
Sig. (2-tailed)	-		0.000
N	34		34.000
Pending_Y			
Pearson correlation	0.931**		1.000
Sig. (2-tailed)	0.000		-
N	34		34.000

**: Correlation is significant at the 0.01 level (2-tailed)

Table 4: COBIT mapping business goals and objectives of COBIT Telkomsigma in perspective

Business goals and objectives Telkomsigma	COBIT business goals	COBIT business goals prespective
Creates the ability and opportunity to earn revenue 10-15% above market average by expanding the scope of services	ROI of IT investments that increase business investment	Financial perspective
Implement good corporate governance through the adoption of the parent company	Improve corporate governance and transparency	
Creating a banking service with handbook and regionally grouping	Improved customer orientation and service	Customer perspective
Module creates a stable and competitive to improve bank performance	Offer competitive products and services	
Package of services with competitive man-days calculation, so that clients can optimally develop products	Achieve cost optimization services	
Creating a sustainable life cycle services and supported by resources. Mutual support and services from other business units	Improve and maintain business process functionality	Internal perspective
Consider the total cost of ownership, so that the cost will be efficient	Lowering the cost of the process	
Efficiency with control and support decision-making in terms of the services that are accurate, reliable, meet SLA as well as with audit trail function to control and audit	Deliver compliance with internal policies	Internal perspective
Improving skill and professionalism of employee by E-learning and training of soft skill	Increase the skill and professionalism of the employees with e-learning and soft skills training	Learning and growth perspective
Building a healthy corporate culture created mutual respect and personal integrity and professionalism	Obtaining and retaining skilled and motivated people	

Prioritizing and linking business and IT goals in the financial sector

If viewed from the financial perspective that the company wants to trigger increasing revenue from 10-15% above the average market, so the revenue (return on investment) in accordance with the target. Where investment in IT which has been issued by the company can be used effectively and can be used as a reference for business development in the IT business. Additionally, standard of good corporate governance is applying in the companyso that business risks can be mitigated and at the same time improve the performance of the company. Briefly business enterprise goals can be formulated as follows:

- Any funds invested should be able to increase the Return on Investment (ROI) and value for the company. Continuous innovation and creative in developing services ICT in Indonesia and in the region
- Through, sustainable growth and the mechanisms through which efficiency in resource use, the target for the IPO should be in accordance with the planned schedule
- Through, a standard mechanism, operational and management effectiveness can be run as specified
- To reach the target that has been approved, business processes collaborate and interact with internal and external parties, continuously improved
- Dynamic organization in order to respond to market dynamics

Identification IT goals: After identifying the business goals the next step is to identify the appropriate IT goals with case studies. COBIT is already mapping business goals to IT goals. The mapping can be seen from the IT goals anything that would support the business goals of the company could be in Table 5.

Refers to policies and programs telkomsigma, acquired business goals are then adjusted to the mapping of COBIT its business goals. Policies and programs telkomsigma with 4 BSC perspectives linking with IT goals. Thus, the questions are summarized in the questionnaire were developed based on the IT goals that are in accordance with the policies and achievements telkomsigma (Grembergen and Haes, 2008a, b).

Identification of control objectives: Control objectives identification of any existing IT process in COBIT 4.1 is a means of control over the IT process itself. And, based on a case study conducted in Busines Unit Director Banking Solution FnB-Telkomsigma contained 88 detailed control objectives which will be disclosed is a process associated with IT services in accordance with the existing process in telkomsigma.

There are 14 control objectives are discussed in the following study. We need to explain that of 14 control objectives that are identified with the instrument measured through interviews and questionnaires which has been measured against the background of thought, from the discussion with management that does not fit with all the control objectives telkomsigma particular services division BU-BAS FnB.

Process control (maturity level): Setting process flow ICT companies organized according to the structure of the

Table 5: Table recapitulation of the questionnaire

Variables	Control objectives	Total respondent	Maturity level	Index
Planning and organisation				
PO1	Define a strategic IT plan	10	3	3.2
PO4	Define the IT process, organisation relationship	10	3	3.4
PO7	Manage IT human resource	10	2	2.4
PO8	Manage quality	10	3	3.0
PO10	Manage project	10	3	3.2
Acquistion and implementation				
AI4	Enable operation and use	10	2	2.4
AI6	Manage change	10	3	2.8
Delivery and support				
DS1	Define and manage service level	10	3	3.2
DS3	Manage performance and capacity	10	3	3.1
DS6	Identify and allocate costs	10	3	3.2
DS8	Manage service desk and incidents	10	2	2.3
DS10	Manage problems	10	3	3.1
DS13	Manage operations	10	3	3.0
Monitoring and evaluation				
ME1	Monitor and evaluate IT performance	10	3	3.0

associated processes of ICT. Resources ICT, information and strategic objectives of the company as set by the company's IT processes DS domain. The process flow is based on management guidelines that include KGI, KPI and maturity models. Setting process flow ICT companies for the purpose of directing and controlling the company to achieve its goals by adding value that balances risk factor for the value of the ICT and the process through a structure of relationships and processes.

How to integrate enterprise IT management and optimization of the company through the Delivery and Support (DS) to guarantee the efficiency and effectiveness of remedial measures in connection with the company. Draft governance model of ICT and audit of ICT only includes delivery and support (delivery and support).

COBIT 4.1 control processes are the processes that must be passed to be able to measure the level of service of process in telkomsigma. Summary of the interviews and questionnaires revealed the following Table 4 goal is to measure the extent to which performance of performance with management's expectations.

Based on the calculation of the level of maturity models in Table 5. It can be seen that the company is in the range of 3. This means that the information systems business unit-FnB Banking Solution Telkomsigma still not reached the level of best practice. The results of the broad range of maturity level 3 means the process has evolved to the stage where similar procedures are followed by different people perform the same task.

Lack of communication, guidance and training to business objectives with standard procedures and responsibility to the individual level are still visible results. There is a high confidence that the knowledge of the individual, therefore frequent errors. The process has led to the documentation of standard procedures and the procedures have been documented through the training of IT personnel. But, the training is not yet standard. And, the deviation will be difficult to detect.

CONCLUSION

After mapping between business objectives and business goals COBIT 4.1, analysis and evaluation of the results, then the conclusion can can be written as follows.

Results evaluation of operational performance through maturity COBIT 4.1 framework shows that there are disfluencies of handling process CR and EC that are shown with the lowest maturity level rating EI4 (Enable Operation and Use) and DS8 (Manage Service Desk and incidents). Both could be causedby the accumulation of CR and EC treatment completion.

Results evaluation of the quantity and quality of staff through maturity of COBIT 4.1 framework shows that there is batch-process handling of CR and EC with the lowest maturity level rating DS7 (Manage IT human resources). This could be the caused by the accumulation of CR and EC problem to be solved.

RECOMMENDATIONS

For further study, researchers suggest to look deeper in to inadequate capability and capacitcy of staff handling of the smooth process of handling the EC and CR. We also recommend for achieving a better level of maturity:

- Management must make improvements on an ongoing basis, especially for process of handling CR and EC as shown in the results of maturity DS7 (Manage IT human resource) as well as in handling the smoothprocess CR and EC that are shown with the lowest maturity level rating EI4 (Enable Operation and Use) and DS8 (Manage Service Desk and incidents)

- Management should consider implementing a performance measurement method to assist management to manage resources and processes of IS/ICT that aligned with business goals. As mentioned in the beginning of this chapter, i.e., key performance indicators, key goal indicators are then fitted with a set of action plans and methodologies for management to achieve business objectives, through the maturity level control objectives

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