

# **Measurement of Employees Resistance to Change using Balanced Scorecard: A Case Study of the Central Correspondence Department at Jeddah Municipality**

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## **Abstract**

Balanced Scorecard (BSC) is one of the most commonly used technique for managing strategic plans for both for-profit and non-for-profit organizations. In addition, BSC is widely use nowadays for other purposes within organizations. In any organization, new strategic plans usually come with new initiatives and systems. This kind of change may force organizations' management team to improve or modify their work processes accordingly. Also, due to the rapid change in markets and technology, process improvement be as a must for organizations to stay competitive. Resistance to change is one of the main issues organizations face when it implementing updates, modifications or any kind of changes on work processes. Organizations could use BSC as a tool to track and meager the progress in their strategic plan implementation. In addition, organizations' management may use well defined tools to measure and manage any resistance to change could occurring during new strategic plan implementation. Instead of using two or more different tools to manage the organization's strategy and its employees' resistance to change, the aim of this study is to explore the possibility of using BSC as a single tool for managing both organization's strategic plan and employees' resistance to change simultaneously. This study is supported by a literature review on the effectiveness of BSC and its implementation in governmental institutions. In particular, this study focuses on the Central Correspondence Department (CCD) at Jeddah Municipality (JM) and the correspondence tracking system (CTS) as a case study. Finding of this study show the efficiency of using the BSC technique, for resistance to the change measurement through specific Key Performance Indicators (KPIs).

## **Keywords**

Balanced Scorecard (BSC), Change Management, Resistance to Change and Key Performance Indicators (KPIs)

## **1. Introduction**

Balanced Scorecard (BSC) is one of the main performance measurement tools used in the current era to measure the extent of the performance of departments and individuals and the efficiency of the person, project or the entire company.

Balanced ScoreCards measure performance took proliferation and expansion of the recently increased use within the institutions, private enterprises and governmental organizations. It is also, one of the most important figures, which reflects the extent of exposure-based development within those organizations under the factoring and ecoverment, processes automation and development associated with it.

Many scholars defined BSC, its importance, its role in strategic plans as well as its relationship with measuring resistance to change.

### **1.1 What is the Balanced ScoreCard (BSC)?**

As Chakrabarty mentioned in his paper, Balanced Scorecard (abbreviated as BSC) is a tool of performance measurement and management that was developed in 1992 by Robert S. Kaplan (Harvard Business School) and David P. Norton. Since took shape, it has been already widely applied in the western business circles, and has been chosen by "*Harvard commerce comment*" as one of "the top-ten most influential management idea over the last 80 years".  
[1]

In addition, BSC can be defined as a way of:

- measuring organizational, business unit or department success.
- balancing long-term and short-term actions.
- balancing different measures of success:
  - o Financial
  - o Customer
  - o Internal Operations
  - o Human Resource Systems & Development (learning and growth)

□ A way of tying strategy to measures to action. [2]

Moreover, Chakrabarty talked about the emergence of this science as reported in the paper that, Kaplan & Norton (1996) claim that the BSC provides managers with the instrumentation they need to navigate towards future competitive success. It translates an organization's mission and strategy into a comprehensive set of performance measures that provides the framework for a strategic measurement and management system. They point out that the ability of a company to mobilize and exploit its intangible assets has become more decisive than investing and managing physical and tangible assets (Kaplan & Norton 1996, pp. 2-3). They also emphasize that front-line employees must understand the financial consequences of their decisions and actions and senior executives must understand the drivers of long-term financial success (Kaplan & Norton 2002, p.8). They claim that through a series of cause-and-effect relationships embodied in the BSC the non-financial capabilities (customer, internal business process and innovation, learning and growth) eventually become translated into superior financial performance (Kaplan & Norton 1996, p.14). Thus, to become "strategy – focused", an organization should be able to (a) translate strategy into operational terms, (b) align the organization to the strategy, (c) make strategy everyone's everyday job, (d) make strategy a continual process and (e) mobilize change through executive leadership (Kaplan & Norton 2004, p.xi). [1]

Furthermore, Bernard Marr defined the BSC as the following:

"The Balanced Scorecard (BSC) is a strategic performance management framework that allows organisations to identify, manage and measure its strategic objectives. The concept was initially introduced by Robert Kaplan and David Norton in a Harvard Business Review Article in 1992 and has since then been voted as one of the most influential business ideas of the past 75 years".[3]

Kaplan and Norton identified four generic perspectives that cover the main strategic focus areas of a company. The idea was to use this model as a template for designing objectives and measures in each of the following perspectives:

- The **Financial Perspective** covers the financial objectives of an organization and allows managers to track financial success and shareholder value.
- The **Customer Perspective** covers the customer objectives such as customer satisfaction, market share goals as well as product and service attributes.
- The **Internal Process Perspective** covers internal operational goals and outlines the key processes necessary to deliver the customer objectives.
- The **Learning and Growth Perspective** covers the intangible drivers of future success such as human capital, organizational capital and information capital including skills, training, organizational culture, leadership, systems and databases.

Initially it was suggested to visualize the BSC in a four-box model (see Figure 6.1). Many organizations have created management dashboards with these four perspectives to provide comprehensive at a glance views of performance. However, this classic four box model is now outdated and has been replaced by a Strategy Map view (see Figure 6.2). A Strategy Map places the four perspectives into a causal hierarchy to show that the objectives support each other and that delivering the right performance in the lower perspectives will help to achieve the objectives in the upper perspectives. For example, the objectives in the Learning and Growth Perspective underpin the objectives in the Internal Process Perspective, which in turn underpin the objectives in the Customer Perspectives. Delivering the customer objectives should then lead to the achievement of the financial objectives in the Financial Perspective. This causal logic is one of the most important elements of modern Balanced Scorecards. It allows companies to create a truly integrated set of strategic objectives. The danger with the initial four-box model was that companies design a number of objectives for each perspective without ever linking them. This can lead to silo activities as well as a strategy that is not cohesive or integrated. [4]

## **.8 The Relationship between BSC, KPI's and the change management.**

During the different stages of the procedure of change in the application of e-services and transfer of new information, the evaluation procedure of individuals and different organizations are made. This is for ensuring the effectiveness of the procedure of change, facing any opposition for the application of it, and showing weak and defective points and working on solving it. [14]

The procedure of evaluation shows the different points of performance for individuals and departments. Moreover, the administration of evaluating the performance of the organization shows the different parties involved in the procedure of evaluation and its role where the evaluation procedure is done continuously through the application of the cycle of evaluation. The intervention of standards of performance takes place when applying the different standards to evaluate performance in order to get best results to know the performance. [14]

To guarantee the application of changes in different governmental organizations, a plan is made to motivate citizens and users of e-services to apply and support the changes. In addition, one of the most important motivation factors for citizens and users of e-services is allowing their contribution in the change and permitting them to view the overall change as well as their role and benefits in these changes. Also, take the employees' view points and recommendations since their contribution supports the application procedures of change. [14]

To know the extent of success of change in its different stages, the procedure of change is evaluated and the weak points, defects, and gaps are discovered to adjust them for the sake of the effective of change. [14]

The application of change is made through different awareness programs and communication through training the procedures of change and evaluating through:

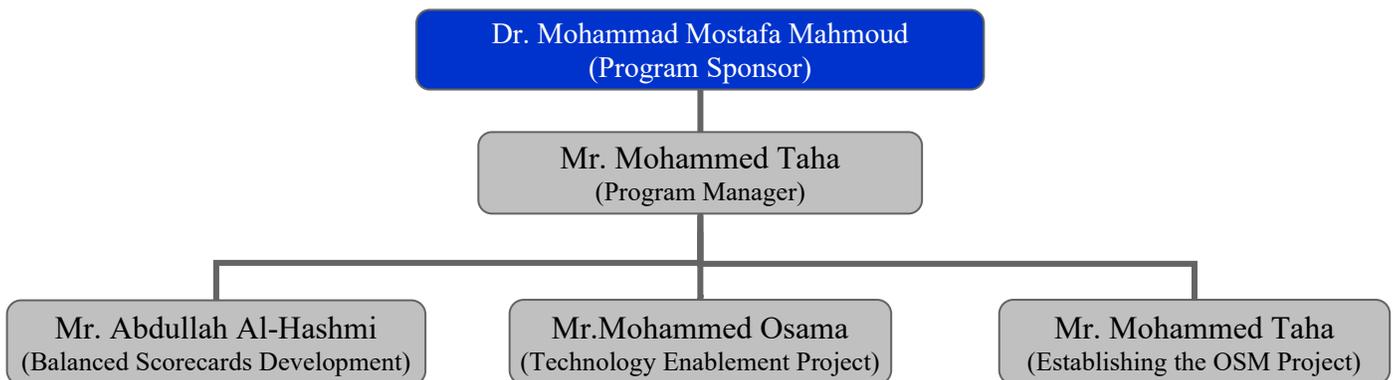
- Monitoring the execution of change plan and the extent of commitment to the steps of work during the application of the plan.
- Monitoring the Criteria for evaluating the performance.
- Evaluating the change procedure by preparing a survey measuring the extent of success of the application of the new project and the extent of the department of change's success in promoting this change.
- Focusing on results and analyzing weak points as lessons to be learnt from in the future. [14]

### **6.9 BSC's application at JM.**

In accordance with the priorities of the Government of Saudi Arabia to highlight the performance measurement in government agencies in the Kingdom and its role in improving performance. Makkah Principality (MP) where designed their own BSC. Since JM is one of the government sectors that affiliated to MP and had to share with some other government sectors in achieving the strategic objectives mentioned in MP BSC. Since early 2008, the Mayor of JM at the time (Eng. Adel Faqih) created a section to measuring the performance in JM called Performance Measuring Department (PMD) deals with the design of BSC at JM level and coordinate with officials in the JM sectors to design their BSC's.

At the beginning, this section was a working group and it is linked directly to His Excellency in the organizational structure. Moreover, the performance measurement at the beginning was a program consisting of several projects, called the performance measurement program at JM. The members of this program team, as shown in the figure below (Figure 6.14).

Figure 6.14: Organization Structure of Performance Measurement Program



This group worked with several consulting firms contracted by JM, such as Ernest & Young and Royyah Company and the Office of Dr. Mandourah for consultation and other consulting companies specialized in the design of BSC. The program team and its consultation stakeholders assist the responsible persons and sectors within JM in the identification of strategic objectives associated with the MP BSCs to design JM BSC on this basis to achieve the MP goals.

Then, this team working on designed the BSC at the level of JM and developed their KPI's. This BSC and its objectives has been divided and distributed into the four main perspectives of the BSC according to Robert Kaplan and David Norton principle of the public sectors BSCs designing. The final form of the BSC of JM as in the following form (figure 6.15)

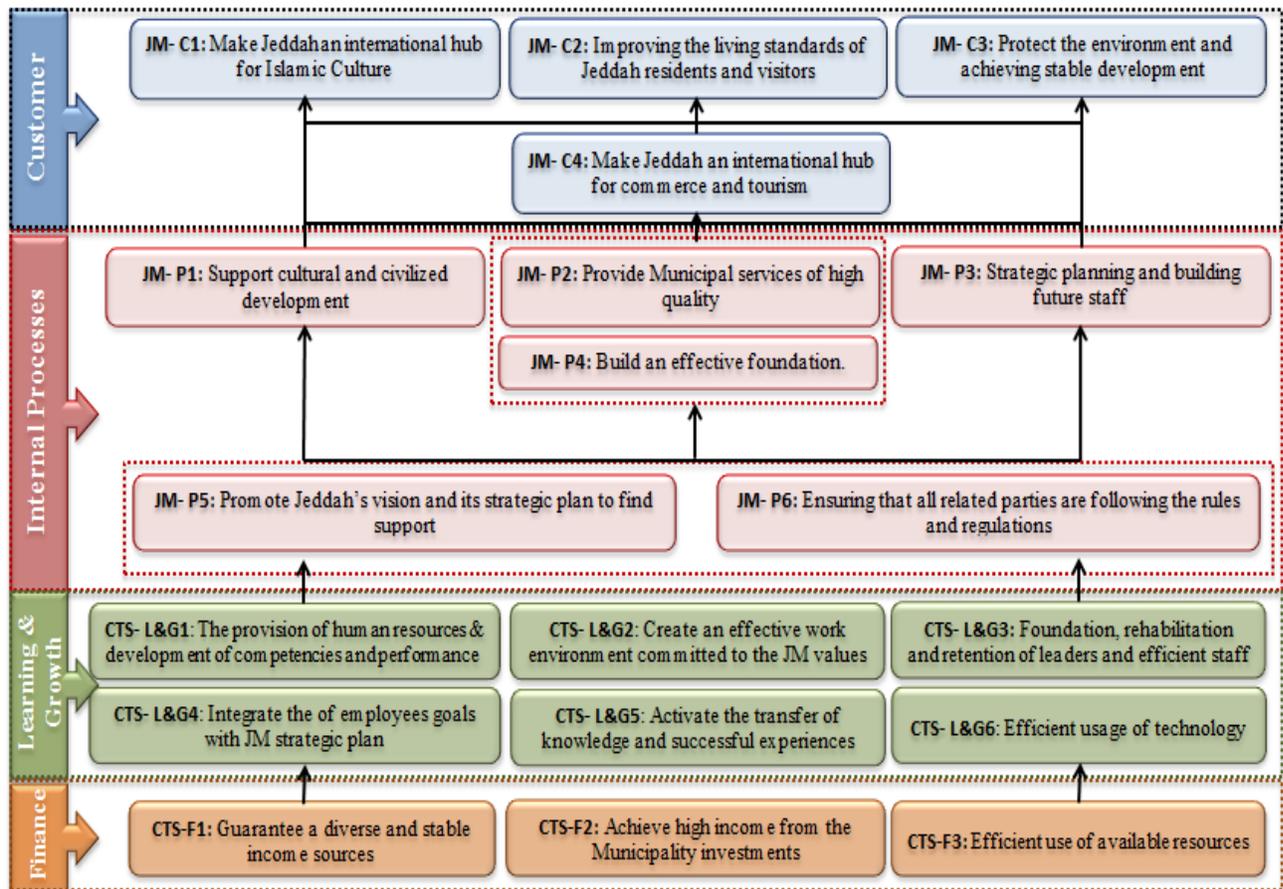
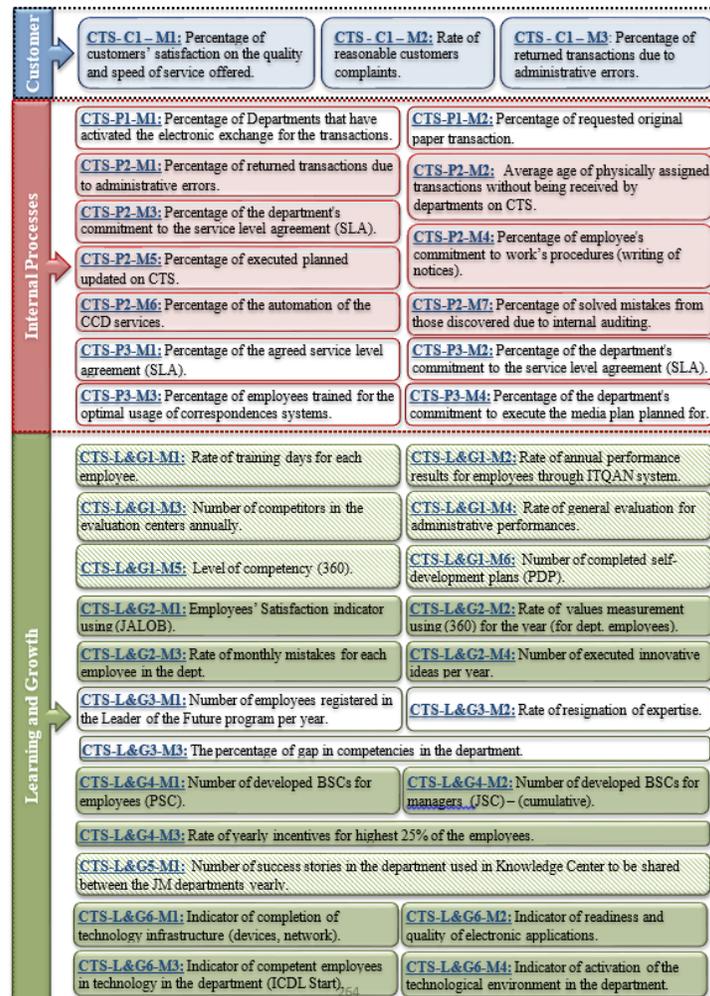
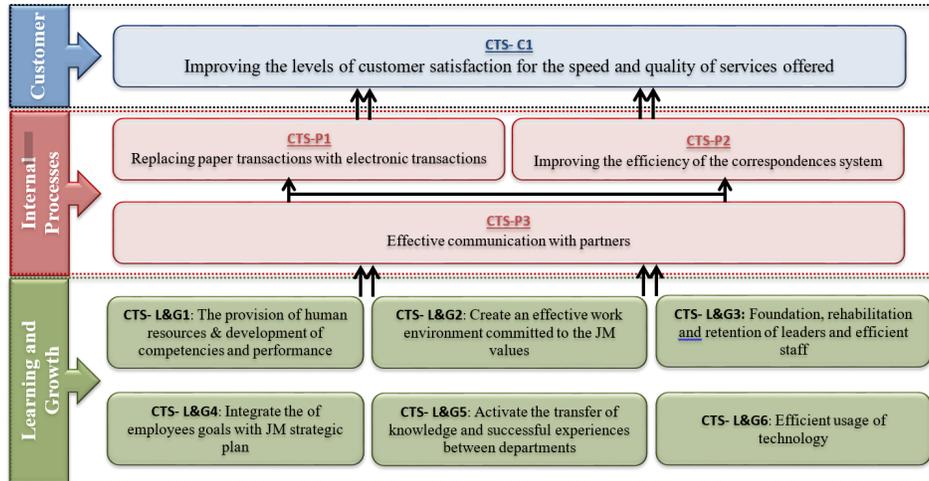


Figure 6.15: BSC of JM.



CTS - BSC: Indicator's card.

CTS – C1 – MI: Percentage of customer satisfaction on the quality and speed of service offered.			
Strategic Goal	CTS – C1	Improving customer satisfaction on the quality and speed of service offered.	
Weight of indicator compared to goal	50 %		
Definition of Indicator	This indicator using for measuring the rate of the CCD's customer satisfaction and its improvement about the department's services' speed and quality. These customers are classified to two types. Internals like the municipalities and other departments at JM and externals like other governmental sectors.		
Measurement equation	Questionnaire.		
Source of information	Results of questionnaire.	Cumulative (Yes/No)	No.
Unit of measurement	Percentage.	Level of target	80 %.
Period of measurement	Semi-annual (6 months).		
Polar ( direction of Indicator)	Positive.		
Level of geographical measurement (Province / City / Municipality / district)	Province of Jeddah.		
Indicator in Province of Jeddah BSC	Improving the living standards of Jeddah residents and visitors.		
Owner of Indicator	CCD.		
Responsibility of indicating the level of target	The General Administration for Administrative Correspondences and Electronic Archiving.		
Responsibility of providing data	The General Administration for Strategic Marketing and Media.		
Responsibility of calculating the indicator	The General Administration for the Office of Strategic Planning.		
Responsibility of auditing	The General Administration for Internal Auditing.		

## Results and discussion

This section is talking about the KPIs' calculations, testing, and analysis for the KPIs of CCD's BSC. Moreover, the analysis will contains this KPIs' testing results and the discussion upon that.

These KPIs are designed to achieve two purposes: First, is to measure the rate of achievement made in the strategic objectives associated with them where this is the main objective of the existence of these KPIs in the BSC. The second purpose of the existence of these KPIs is verified in some and not all of them. This purpose is to measure the resistance to change among the CCD employees' level in some of those KPIs. Moreover, in the level of correspondences employees at JM as a whole in some of the other KPIs.

The data have been gathered for all indicators to measure the performance for the year 1431 H, corresponding to a nearly full for the year 2010 AD (with the difference of some days). The data were collected for several sources, according to the information source that represent in the descriptive cade for each indicator in the BSC manual (Appendix VII). The sources of gathering the data can be summarized in the following types:

- Results of the questionnaire.
- The General Administration for Customer Service – Customer Relations section.
- CTS system.
- Central Correspondences department (CCD).
- CCD internal auditor.
- CCD Manager.
- Cognos system.
- Electronic Complaint System at the Municipality.
- The General Department for Information Technology.
- The General Department for Human resource.

Periodic of collection such data was different based on the period of measurement for an indicator where they measured monthly, quarterly, (6 months) semi-annual, or annually. For consumers and internal processes perspectives some of the data had been extracted by the researcher himself from the systems mentioned above. Moreover, some of these data the researcher obtained it from the officials at JM and he was measured its related indicators using the equations that shown in Appendix VII. The learning and growth perspective indicators have been measured by the General Administration of human resources (HR) and General Administration of information technology (IT). The researcher role here is just to get the calculated value for each reading and insert it in the KPI's measuring table (Appendix VIII) to analyzing it later. Not all the required data for the indicators could be gathered that occurred for several reasons that will be mentioned later below. After gathering the available data in the KPI's measuring table the researcher worked to test and analyze the data that available to him as shown in the following.

The usage of testing these KPIs is to measure how effectively they are used to achieve the desired purpose of its existence that is described previously. With respect to the KPIs of resistance to change it will be noted in every perspective below, especially the perspective of internal processes. This perspective is concerned with the development and changes in the work activities, which are procedures, workflows, rules, and others, that may lead to

the existence of the resistance by the staff at the organization. As well as the obstacles that prevented the measurement of each KPI and the action recommendations to be taken of the possibility of activating and measuring this indicator will be mentioned below. Code N / A that is appears in the readings of some of the KPIs below means that this KPI is Not Activated, or you cannot measure this reading for a specific reason (Not Available).

The CCD's BSC team has agreed upon the target values of each KPI in both perspectives of customers and internal processes. On the other hand, the HR and the team of performance measurement at JM had identified the target values of learning and growth perspective KPIs.

For customers' perspective: as shown in Table 6.6, this perspective has three KPI's. first one used to measure the customers' satisfaction on the quality and time of work. This KPI has three sup-indicators used to measure the satisfaction on Transparency in the proceedings, speed of work, and the quality. This KPI and its sup-indicators supposed to be measured by the General Administration for the office of strategic planning. Moreover, the data showed be gathered by the General Administration for Strategic Marketing and Media. Due to what has happened in Jeddah on Wednesday 08/12/1430 H - 25/11/2009 that the problems caused by the floods and its subsequent of holding the calculation of these KPI's temporary according to order of the Mayor of JM at that time.

The second KPI was used to measure the customers' satisfaction also, but in another way that was by calculating the rate of reasonable customers' complaints. This KPI also could not be calculated because of lack of cooperation by both the CCD's manager and the Customer Relations Section at JM with the researcher to provide the required data and calculate it.

The third KPI was used to calculate the percentage of returned transactions due to administrative errors. This KPI is also reflecting the customers' satisfaction where if its readings decreases that means the satisfaction will increase. This KPI was tested as shown in figure 6.22. The trend line of this KPI for the year 1431 H is decreasing which is good. Sometimes, it's coming up and down according to some factors but the problems her are that:

- In the last reading, the percentage is raised up to 0.95%, which means there is a reversal in performance. Researcher believes that this also happened because of what followed the incident on Wednesday 08/12/1430 H - 25/11/2009 that led to the firing of many of the contractors at the JM.
- The target for this KPI is higher than the actual readings of it which indicate that its value need to be reduced, yet it's means that this indicator is already verified and there is no need for it.

This KPI can be used as one of resistance to change indicators where it's measure the CCD's employees resistance to follow the roles an regulations in the work to avoid the administrative mistakes in their work. Where the returned transactions mean that, the employee is not attentive to his work and not sticking to the work procedures. This KPI will reuse in other strategic objective in the internal processes of this BSC.

Table 6.6: the customers' perspective KPIs with its targets and periodic readings.

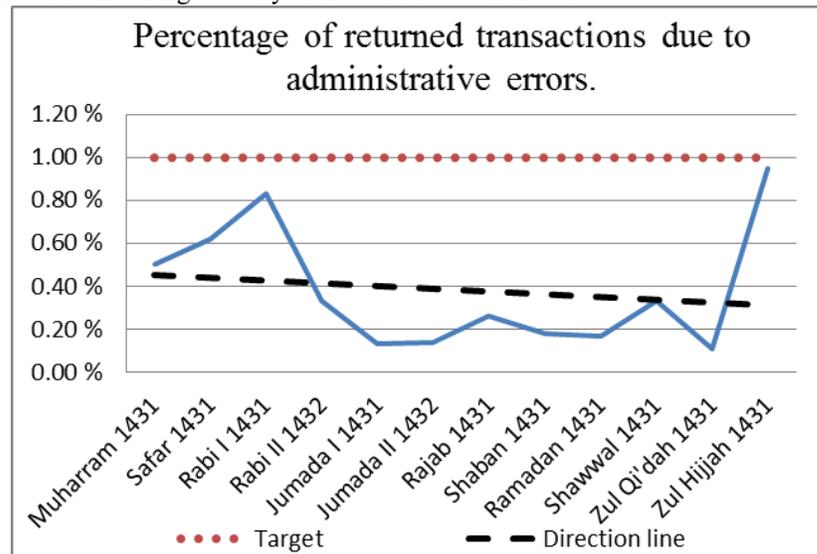


Figure 6.22: its shows the percentage of returned transactions due to administrative errors

Perspective	KPI code	The KPI	Target	Muharram 1431	Safar 1431	Rabi I 1431	Rabi II 1432	Jumada I 1431	Jumada II 1432	Rajab 1431	Shaban 1431	Ramadan 1431	Shawwal 1431	Zul Qi'dah 1431	Zul Hijjah 1431
Customer	CTS-C1-M1	Percentage of customers' satisfaction on the quality and speed of service offered.	80%						N/A						N/A
	CTS-C1-M1.1	indicator of satisfaction for transparency in the proceedings	80%						N/A						N/A
	CTS-C1-M1.2	Indicator of satisfaction for the speed of service delivery	80%						N/A						N/A
	CTS-C1-M1.3	Indicator of satisfaction for the accuracy and quality of service	80%						N/A						N/A
	CTS-C1-M2	Rate of reasonable customers complaints.	20%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CTS-C1-M3	Percentage of returned transactions due to administrative errors.	≤1%	0.50 %	0.62%	0.83%	0.33%	0.13%	0.14%	0.26%	0.18%	0.17%	0.33%	0.11%	0.95%

For internal processes perspective: as shown in Table 6.7, this perspective have three strategic objectives with thirteen KPIs. first one (CTS – P1- M1) used to measure the Percentage of Departments that activated the Electronic Transactions System which is a new development of the CTS system to achieve the objective of replacing paper transactions with electronic ones. Actually, the project or initiative for this objective didn't start yet but the implementation of this idea of electronic exchange has began as initiatives of other department at JM that were appeared in the reading values of this KPI. By looking to figure 6.23 its noted that, the execution rate is down to almost non-existent. In addition, the target value is very high but the research thing its can be achieve by the last early of this strategic map. Providing that the work goes smoothly without unexpected obstacles as what happened at the end of 1430 H.

The second KPI (CTS – P1- M2) used for measuring the same objective and it's also measure the resistance that may occurs for this new system on new work procedures. Unfortunately this KPI couldn't be tested because the new system (integration with outlook) does not applied yet. This delay in the implementation of this project has led to delayed in the activation of this indicator. Moreover, when the new system will activate, this KPI should be integrated in this system because its difficult to measure manually.

The third KPI (CTS – P2- M1) is the percentage of returned transactions due to administrative errors, which is discussed in the customers' perspective above. Its reused here as an objective indicator and resistance to change indicator as well. This time it's measure the achievement of the objective of Improving the efficiency of the CTS system. All of the above dissections are applied here. Add to that, the indicator status indicates a slightly decrease, which indicating that the efficiency of the system is improve in the right direction. On the other, it's indicates an improvement in the resistance of the employee with the exception of the last month reading which may be the value of the errors was increases because of the firing problem that mentioned above which led to increase the work pressure on the remaining employees.

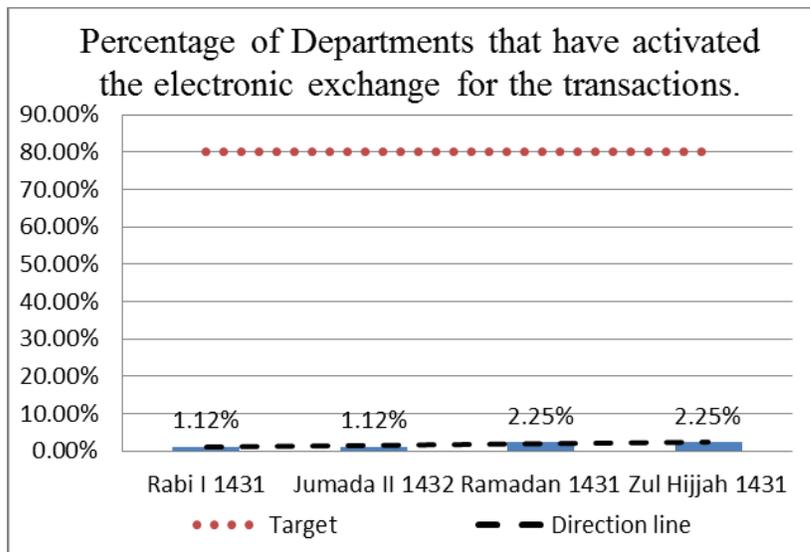


Figure 6.23: its shows the percentage of departments that activated the electronic transactions system

The fourth KPI (CTS – P2 – M2) is used also to measure the improving in the efficiency of the CTS system by calculating the average age of physically assigned transactions without being received by departments on CTS. For testing this KPI the resurcher assumed that the stating point for measuring this KPI 1/1/1431 H which means by the end of is day the age of all non received transactions is equal to one and is growing daily tell that transaction has been received and so on. This KPI was measured monthly, and its not comulatev. This KPI will be explained belwo in details as an illustrative example for the indicators design and measurment. The example will explaine how the data are gathered, how this KPI was designed and calculated, and how its discrebtive card will be explained as well.

By testing this KPI as in figure 6.24 it found that, the trend line was incresus which means the system efficiency was decreased. Moreover, this indicator shows the resistance of correspondances employees to receive the transactions referred to them. Also, that means they are resiste the development of the work processes with the current CTS. In addition, to their unwillingness to follow the working procedures that are necessary to do their work using such a system. This resistance specifically has several causes as the researcher observations for the correspondances employees and his sporadic discussions with them. These causes can be sumraized as follows:

1. The employee fear of the leagl accusation for the transaction delay if he receiving it and the systems strate calculate the age of treatment with him.
2. The employee beliefs that the receiving and assigning actions for the transactions on the system cause of wastes time and increases the effort to no avail.
3. The employee negligence and lack of conviction of the transaction receiveing importance as soon as the speed of delivery.
4. The absence of the control system to punish those who delayed in receiving the assigned transactions without any excuse.
5. Lack of financial motivations on the application of accuracy and speed in the workprocesses for correspondances employees.
6. Lack of human resources in some departments and sections sepeacily after feairing the contartces in these departments , which increases the burden on the remaining employees.
7. Frequent damages and the system stops working, causing confusion in the work as some employees maintioned in the defects of the system (Appendix VI). For this reason the employees take an excuse to escape from their work usually.
8. The mixing of transactions of the citizens and the internal personnel affairs transactions that they do not care about it usualy to clouse them in the system, resulting in a very large age for some transactions they are in fact are not citizens transactions at all.

And many other reasons that are difficult to restrict them here.

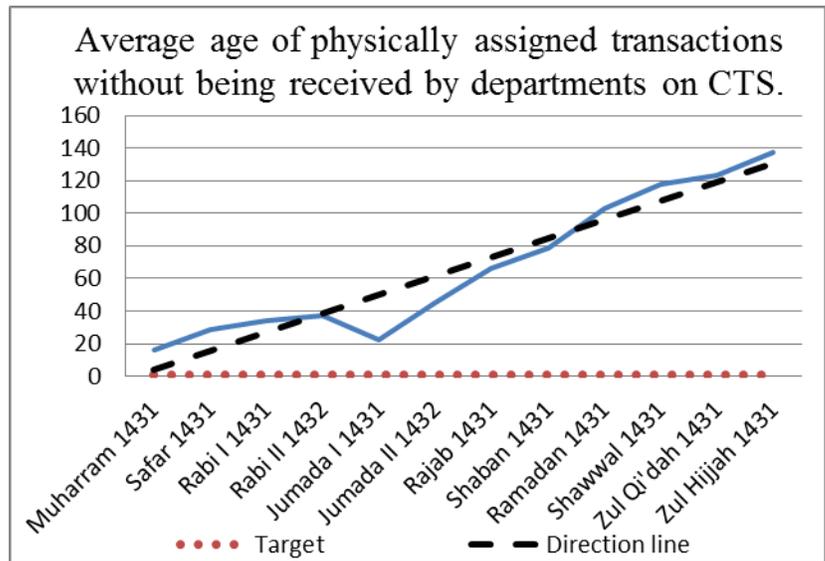


Figure 6.24: its shows the average age of physically assigned transactions without being received by departments on CTS

The fifth KPI (CTS – P2- M3) was used twice where it is the eleventh KPI (CTS – P3 – M2) also in the same perspective, but in the first time it's linked to the second objective, and in the second time it was linked to the third objective for the same perspective. So, it will be analysed once. This KPI was used to measure the Percentage of the department's commitment to the service level agreement (SLA). It can also be used for measuring the CCD employees' resistance to the SLA, which means they are resisting the development in their work. Briefly, this KPI wasn't activated because it's difficult to measure it manually. If the new system will activate, this KPI will be integrated in it then it can be measured easily. Moreover, the lack of cooperation between the CCD manager and the researcher in the calculation of readings specially after the changing of the head of the sector and the sector reorganization increases those difficulties.

The sixth KPI is (CTS – P2 – M4) which is the percentage of employee's commitment to work's procedures (writing of notices). This KPI was also used to measure the correspondences employees' resistance to the change which means they resist the development in their work procedures by writing a note about each transaction on the CTS before making any action about it on the system. By testing this KPI as shown in figure 6.25 it was found that, the trend line is slightly tilted towards the top. In general it can be said that, the trend line here is a straight line on the 60% approximately which means that the employees were committed to writing notes about 60% of the transaction in the CTS. Although the notes field has become mandatory in the CTS system but the employees were able to circumvent that development by writing some unintelligible numbers, letters, or phrases such as 0, spaces, or duplicated letters just like the XXXX, and so on. Moreover, the target was 100% which led the CCD manager and the sector development team to move to do something to reach this target. The researcher believes it's not that difficult to reach that target. He will explain that in the recommendations section of this chapter.

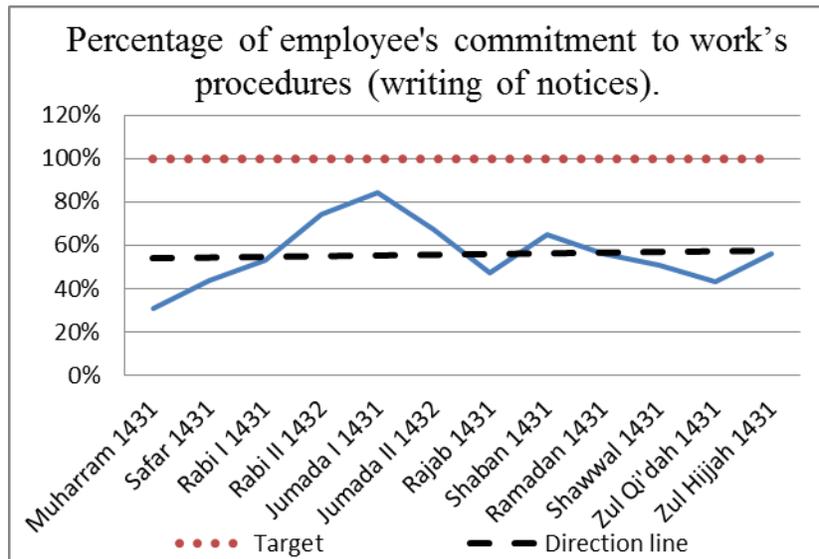


Figure 6.25: it shows the percentage of employee's commitment to work is procedures (writing of notices).

The seventh KPI (CTS – P2 – M5) which is the percentage of executed planned updates on CTS. This KPI was used for measuring the improvement in the CTS performance through its executed updates. According to the KPI descriptive card, CCD has the responsibility of providing data and calculating the indicator but because of the lack of cooperation from CCD manager with the researcher. The researcher took that responsibility by gathering data from the report of the usability testing of the CTS system which was made by the IT department. In that report, there were 21 problems in the system they planned to solve in 1431 H but actually, by the end of the year they executed only 25% as shown in figure 6.26. The trend line is ascending which is good. In the first quarter the reading was 5% and by the fourth reading it raised up to 25% which seems to improve and by the end of the fourth

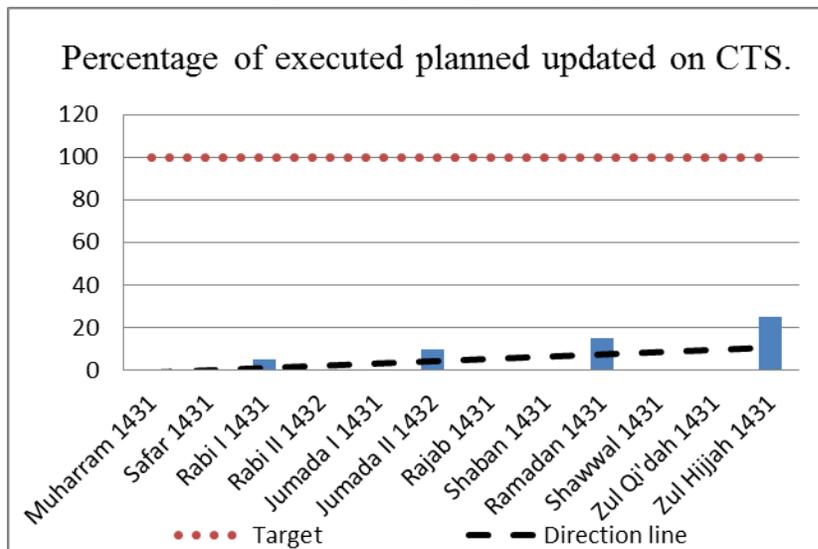


Figure 6.26: it shows the percentage of executed planned updates on CTS

year of activating this BSC they can reach the target unless no additional updates will added to the planned one. On the other hand, its suppose to replace the full electronic system with the current one as soon as possible which means they should finish this planned updates on currant CTS Immediately or it would be meaningless in the future. Therefore, the current rate of work 5- 10% each quarter is not enough. When the department apply the new system they can also run this KPI for the new system where each new application as its bugs or fowls and need to be improved and track that improvement.

The eighth KPI (CTS – P2 – M6) which is the percentage of the CCD’s automated services was used to test the improvement in the corespondances system but this time not the CTS system because the related objective is contains the semi-electronic system and the rules, regulations, and procedures of work as a nother system also need to be measured like the CTS. So, those other work procedures were planed to automated as a improvement in the department and its system efficacy. By testing this KPI as sowhn in figure 6.27 and analyzing the results it can be observed that, the trend line is positive. This KPI is comulitive measure and the last reading was 72.73% as shown in figure 6.27 and in table 6.7. That means this KPI intiatives are goong well and close to the target. The resurcher belife that thoses intiatives were going as planned for, but because of what happened after Wednesday 08/12/1430 H - 25/11/2009 that delayed the implementation of some of these intiatives, which led to delaying to reach the target value by the end of the year.

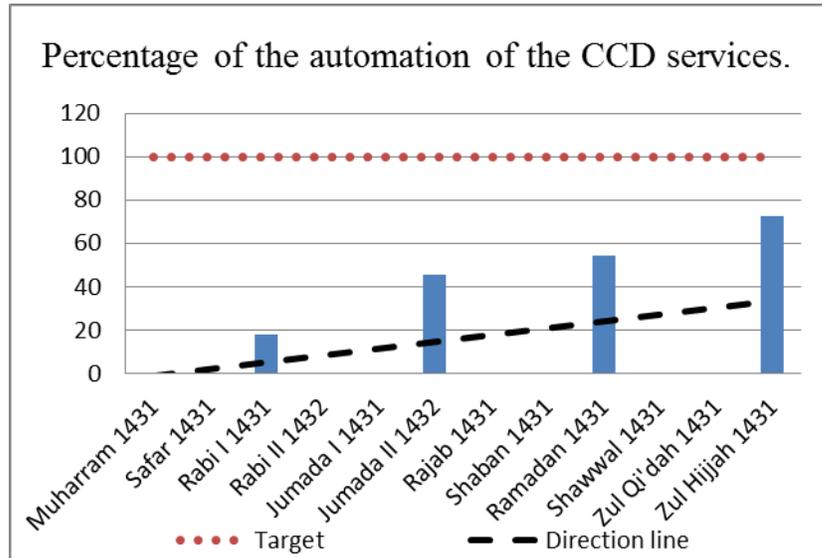


Figure 6.27: its shows the percentage of the CCD’s automated services.

The ninth KPI (CTS – P2 – M7) is the percentage of solved mistakes from those discovered due to internal auditing. This KPI is inactivated one. This is also habeend because of lack of cooperation from CCD manager with the researcher and the manager preoccupation’s in the daily activities.

The tinth KPI (CTS – P3 – M1) is the percentage of the agreed service level agreement (SLA). It was also inactivated indicatro and the reasons behind that was the lack of cooperation from CCD manager. Although the completed data were available with the CCD manager as the researcher beliefs. Where the SLA formula was ready and has been activated in the begin as a period of time and then the subject was diminished. This is means that the manager has some data for this indicator, but when he was asked by the researcher nothing provided to him.

The eleventh KPI (CTS – P3 – M2) was the same as the fifth one. So, it used in the second time to measure another strategic objective in the same perspective as mentioned before. Moreover, its analysis and testing problems are discussed previously.

Twelfth KPI (CTS – P3 – M3), which was the percentage of employees trained for the optimal usage of correspondences systems, was also unmeasured. Although the researcher has the CTS training packages and he is sure about its activation, especially in Sub-municipals and some departments at JM, but also according to the lack of cooperation from CCD manager the researcher could not test or activate this KPI. On the other hand, according to the study questionnaire that analyzed in Ch5 it found that, 34.32% of the study sample said they attend a preliminary course before the implementation of the current CTS. They maybe mean the IT Department training not the CCD one. Although it is still can be counted as a part of the optimal usage training for correspondences systems. Moreover, in other question, 38% of them feels they need training on the current CTS where 62% of them think they do not need any training on this system. May be some of those 62% were also, got that especial training on CTS before the questionnaire distribution where the questionnaire was distributed in the second half of the year 1431 and the training packages was ready before that time and before Dr. Haitham Bogis leave the municipality at approximately April 2010. In addition, this KPI was one of the indicators that are used for measuring one of the applications or solutions of resistance to change reduction. As mentioned in Chapter 5 of this thesis there is a relationship between resistance to change and the organizational support for employees to develop through training. This means training is one of the best solutions to reduce the resistance to change and it has needed here to test as one of the system efficiency increases measurement indicators. In addition, it is the first Initiative should be made to reduce the resistance to change for the correspondences employees at JM.

The last KPI in this perspective (CTS – P3 – M4) was used to measure the CCD’s commitment to execute the media plan planned for. Moreover, this KPI was also one of the indicators that are used for measuring one of the applications or solutions of resistance to change reduction. So, by applying the CCD’s media plan the changes on the CTS or even in the work processes and procedures will be published and illustrate which is the best application of The principle of openness and transparency which was tested in Chapter 5 in this thesis as one of the hypotheses. And the test result shows that there is an inversely relationship between resistance to change (RCI) and Promoting a culture of development in the organization (PCDI). That means the best way to Promote this principle is by making a media plan. This plan will cover the current system using manual or inactions and the planned updates on it with the due dates as well. By testing this KPI readings as shown in figure 6.28, it’s found that the CCD was committed to execute its media plan as it planned for where by the end of year 1431 its achieved approximately 67% of the planned media plan. This value was achieved by completing the following:

- Brochure about CCD’s employees tasks, other internal departments correspondences employees tasks, and the external departments and sub-municipalities employees tasks.
- Regulatory Procedures Manual: In collaboration with the researcher and TQM department at JM.
- CTS user guides.
- CTS and Cognos reports guides.

The researcher belief that, it was possible to achieve this KPI target, but he expected that the events of the floods and its consequences hurt a little to achieve the target.

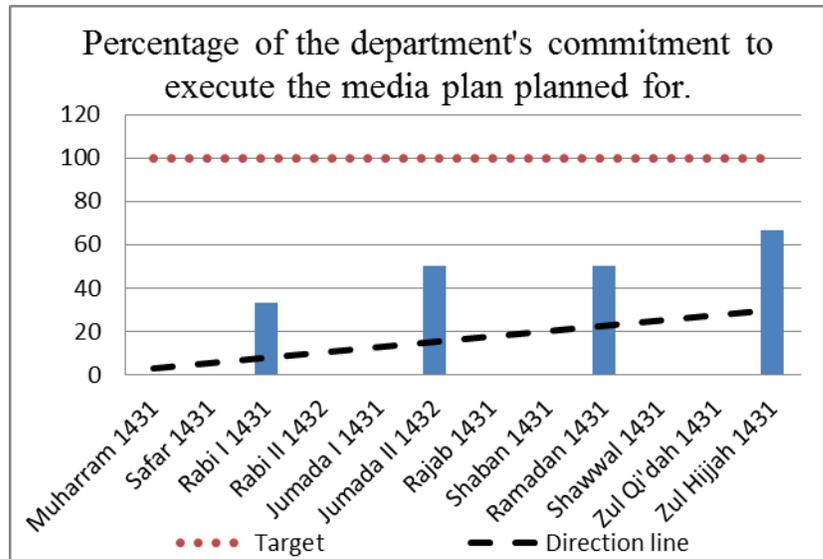


Figure 6.28: its shows the percentage of the CCD’s automated services

Table 6.7: the internal processes' perspective KPIs with its targets and periodic readings.

Perspective	KPI code	The KPI	Target	Muharram 1431	Safar 1431	Rabi I 1431	Rabi II 1432	Jumada I 1431	Jumada II 1432	Rajab 1431	Shaban 1431	Ramadan 1431	Shawwa 11431	Zul Q'dah 1431	Zul Hijjah 1431
Internal processes	CTS-P1-M1	Percentage of Departments that have activated the electronic exchange for the transactions.	80%			1.12%			1.12%			2.25%			2.25%
	CTS-P1-M2	Percentage of requested original paper transaction.	≥20%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CTS-P2-M1	Percentage of returned transactions due to administrative errors.	≤1%	0.50%	0.62%	0.83%	0.33%	0.13%	0.14%	0.26%	0.18%	0.17%	0.33%	0.11%	0.95%
	CTS-P2-M2	Average age of physically assigned transactions without being received by departments on CTS.	working day	16	29	34	37	22	45	66	79	103	118	123	137
	CTS-P2-M3	Percentage of the department's commitment to the service level agreement (SLA).	90%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CTS-P2-M4	Percentage of employee's commitment to work's procedures (writing of notices).	100%	31%	44%	53%	74%	84%	67%	47%	65%	56%	51%	43%	56%
	CTS-P2-M5	Percentage of executed planned updated on CTS.	100%			5%			10%			15%			25%
	CTS-P2-M6	Percentage of the automation of the CCD services.	100%			18.18%			45.46%			54.55%			72.73%
	CTS-P2-M7	Percentage of solved mistakes from those discovered due to internal auditing.	20%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CTS-P3-M1	Percentage of the agreed service level agreement (SLA).	80%			N/A			N/A			N/A			N/A
	CTS-P3-M2	Percentage of the department's commitment to the service level agreement (SLA).	90%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	CTS-P3-M3	Percentage of employees trained for the optimal usage of correspondences systems.	80%			N/A			N/A			N/A			N/A
	CTS-P3-M4	Percentage of the department's commitment to execute the media plan planned for.	80%			33.33%			50.00%			50.00%			66.67%

The rest KPIs are for the strategic objectives of learning and growth perspective. The HR are responsible for design, measure and get actions for those KPIs as mentioned before. For this the researcher will talk about it briefly in the following.

The learning and growth perspective has six strategic objectives with a total of twenty-one KPIs. The researcher get some of those indicators data also. Only five of them will be analyzed in the following where thirteen of them were tested. The reasons behind that can be summarized in the following points:

- Five KPIs are measured annually (HR – L&G1 – M2, HR – L&G2 – M1, HR – L&G3 – M1, HR – L&G6 – M1, and HR – L&G6 – M2) which means by the end of year 1431 H there is only one reading for each KPI of these which could not be analyzed. The use of them for the first year in BSC application is just to compare its readings at the end of the year with the targeted values at the starting of this year. So, HR – L&G1 – M2 for CCD was reached its target exactly by the end of the year and HR – L&G2 – M1 was so close to its target. On the other hand, HR – L&G3 – M1 reading was zero by the end of year 1431. The researcher thought that this indicator is useless at the present time. JM and its employees are currently in the stage of establishing the BSCs and the spreading of the concept of performance measurement in the governmental sector. It is too early now to talk on the composition of the leaders of the future until at least the first three years of activating the BSCs at JM. So, the researcher recommends the responsible at JM for those KPIs to review them and develop the missing, modify and delete what are required. HR – L&G6 – M1, and HR – L&G6 – M2 are annually measured and also they are inactivated as well. The researcher believes that it's important to present such KPIs in this stage of the BSC's implementation, but he did not receive any data related to those KPIs from HR and IT departments at JM. Perhaps this occurs because of the lack of implementation of the initiatives due to the activation of these indicators. These initiatives determine the available devices and networks in the CCD currently then determine the needed devices and networks for the CCD to provide it.
- More five KPIs are inactivated as well or at least the researcher could not gather its data. Those KPIs are HR-L&G1-M3, HR-L&G1-M5, HR-L&G1-M6, HR-L&G2-M2, and HR-L&G6-M4. All of them are measures for the total number of employees at JM as a whole. The researcher could not extract the CCD data as a separate from it. Moreover, when he asked the HR about these data in detail as a department data, he could not obtain it also because they calculated as a total number of employees without a department split. So, he assumed they were inactivated at least for a department level.
- Another five KPIs are in this perspective were tested but all their readings values are equal to zero. Those KPIs are the HR – L&G3 – M1 which mentioned before, but they are not annually measured as it was. These KPIs are HR-L&G2-M4, HR-L&G4-M1, HR-L&G4-M2, HR-L&G5-M1, and HR-L&G6-M3. HR-L&G2-M4 is a very advanced indicator. Moreover, the researcher is convinced that, this KPI is not

efficient for such work environment. He believe that such an indicator can be placed in an advanced work environment in the measurement of employeess performance and motivation, so that they can reach the stage of creativity. The researcher also discussed this matter with the authority department of performance measurement at JM and explained to them his objection about this indicator, but authority insisted on the necessity of its existence. The researcher opinion has been categorical proved that, this indicator is currently non- efficient in the CCD's BSC nither in most of the other departments BSCs at JM. Since all the readings during the year 1431 for this KPI for CCD's employees were equal to zero as well as for all JM department according to HR data file for 1431 H [16]. Even in some other BSCs like a BSC of the department of land grants, the readings for the first six months for this KPI were not active (N/A) [17]. As well as the value of this KPI for the months of Muharram and Safar 1432 H for CCD's employees were also equal to zero [18]. from all of the above it is clear that this indicator may be valid for a work environment in a private company such as medical insurance companies like Bupa that need to attract customers or may be its valid in some companies with the creativity nature of work, such as Microsoft, Google, or at least its useful for an development departments in one of the government organizations that nature of work may permeated by innovation and creativity such as the development departments at JM. On the other hand, its does not fit such an indicator with a working environment of a routine nature, as is the case in most sections and departments at JM and most of other government sectors in KSA. All of the above is also applies to the other KPI that is HR-L&G5-M1. About HR-L&G4-M1, HR-L&G4-M2 they may started to be activaited in other departments, but in CCD its early to talke about it alleast for the first year of the department BSC activation. So,because of that all the readings were equal to zero for both KPIs. Finally in this group, HR-L&G6-M3 readings also were equal to zero for the year 1431 H, but as the resercher information this KPI has some values in 1430 H and some of the CCD employees were get the ICDL certificate. Since, the floods that occurred in Jeddah in Wednesday 08/12/1430 - 25/11/2009 this project was postponed till the end of investigations and the providing of the new budget for training department. This delay took all the year 1431 H and the researcher does not know if this project was re-activated or not till now.

- On of this prespective KPIs which is HR-L&G3-M3 suppose to measured quarterly. That means by the end of the year it should have four readings, but the HR did not activait it till the last quarter of the year 1431 H. So, because of that, the resurcher get only that unique reading and he deals with it like as the first group of this prespective KPIs. Therefore, the resurcher has only to comaire this reading value which was 4.63 as shown in table 6.8 with the target value which was 30%. According to that reading, the resurcher expected the CCD is in the right directon. That is because the employees of this Department does not require a distinguished skills more than what they currently have, which means that the small gap in competencies is normally here.

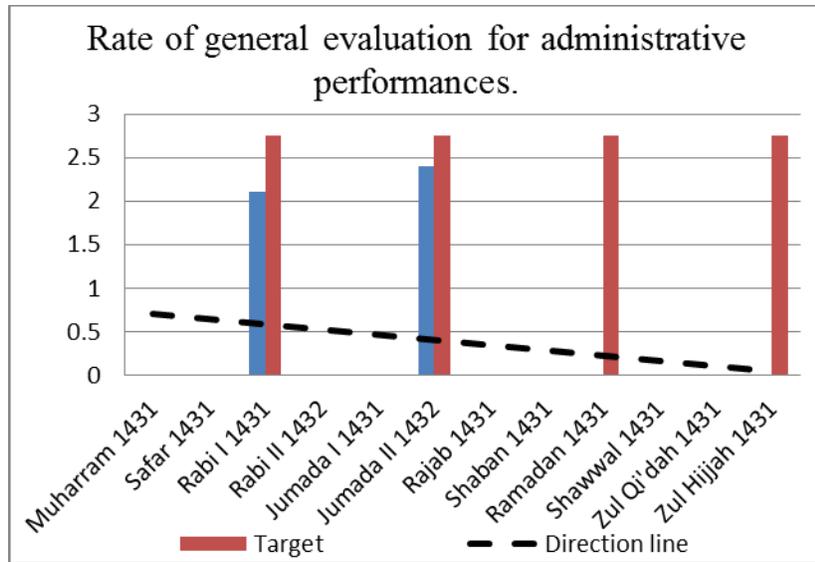


Figure 6.30: its shows the rate of general evaluation for administrative performances for the CCD's employees

The rest five KPIs which are HR-L&G1-M1, HR-L&G1-M4, HR-L&G2-M3, HR-L&G3-M2, and HR-L&G4-M3 were tested and analyzed as follows:

In this group the first KPI was HR-L&G1-M1 which is used to measure the rate of training days for each employee. By analyzing this KPI as shown in figure 6.29 it found that, the trend line is going down away from the target. That was also accrued because of the decreasing some of the training projects and the postponing of others as the ICDL training project that was mentioned before and for the same reasons. The researcher expect that by the demise of that reasons the situation will improve and the target that was set by HR will be achieved easily. This KPI is also one of a very strong indicators that are useful in testing the organization support which was one of the tested hypotheses in Ch 5.

The second KPI in this group was HR-L&G1-M4. This KPI used to measure the rate of general evaluation for administrative performances. Its target value is 2.75 degree. As shown in figure 6.30 this KPI was measured for the first two quarters of the year 1431 then its stopped. That issue was done because of changing the JM mayor and the general manager of HR Department which may be weakest attention to this indicator. In addition the other reason for this stop was ending the contract with the company responsible for the calculation of this PKI at that time after the floods problems since Wednesday 08/12/1430 - 25/11/2009.

The third KPI in this group was HR-L&G2-M3. This KPI is measure the rate of monthly mistakes for each employee in the dept. this KPI is one of the resistance to change indicators. The existence of an administrative mistakes for the department employees mentioned that they do not follow the organization rules and regulations. So, if the employees have mistakes This means they have resistance to comply with the regulations of work and the work environment rules. This KPI was testing for the CCD employees for year 1431 H. As shown in figure 6.31 the trend line was straight approximately around 3. This means on average there are 3 mistakes par employee montly at CCD. By the way, that target for this KPI was 1 mistake par employee which means the CCD employees overall are exceeding this target. This indicate that, those employees have some problems in following the JM working rules and regulations. By othe words it can be saide, they have a resistance to follow that rules and regulations even it's a new ones or not.

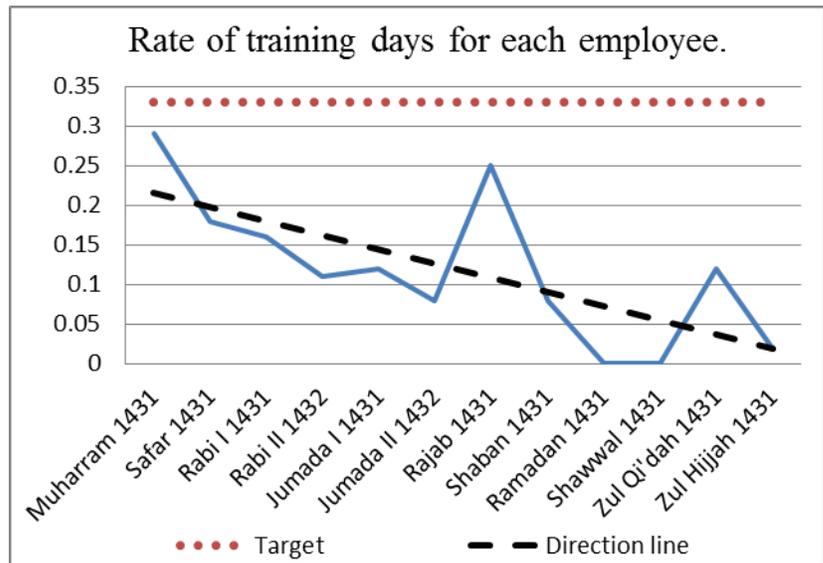


Figure 6.29: its shows the rate of training days for each employee in the CCD

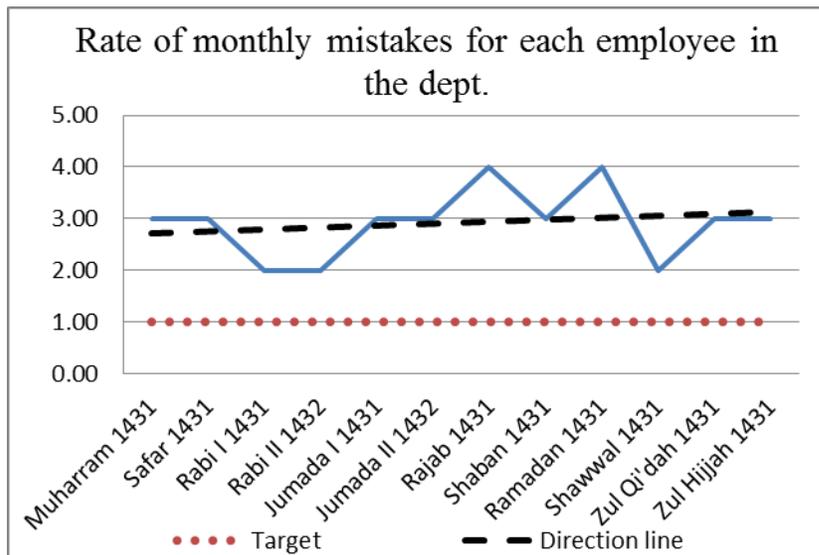


Figure 6.31: its shows the rate of monthly mistakes for each employee in the CCD

The fourth KPI in this group was HR-L&G3-M2. This one is calculating the rate of resignation of expertise. So, as shown in figure 6.32 the trend line is ascending line. Moreover, most of the readings are exceeding its targeted value. This is normal especially after the flooding that incident in late 1431 H and what followed. Most of the qualified employees, especially the correspondances job were contractors were their contracts was terminated suddenly without any thoughtful or functional replacement. On the other hand, there are some government employees, who seized on that incident to request a transfer to other government sectors, whether within or outside Jeddah. All the above-mentioned reasons led to the rise in the indicator of the rate of resignation of leaders, competencies employees, and expertise form JM.

The last KPI in this group was HR-L&G4-M3 which is the rate of yearly incentives for highest 25% of the employees. This KPI was not used for the CCD's employees only. It was used for all the correspondances employees at JM wich are around 400 employees. Although the KPI's name implies word annual or yearly, however the HR Department was calculated monthly. So, because of that the researcher could analyze the readings of this indicator. The periodic measurement of this indicator monthly and named annual and this defect in the indicator regards to HR Department. Therefore, the researcher suggests that the HR Department officials need to review this KPI and also the Compatibility of the KPI mean with the KPI's description, periodic measurement, and measurement unit. According to available data as shown if figure 6.33 it can be observed that, most of the readings are exceeds the KPI target. The researcher believes that there is something wrong in this KPI. Either the target is small and needs to review or that the actual values that need to be reviewed in the mechanism of the distribution of these rewards to employees. Moreover, for this indicator the amount of the increase in achievement must be compared with the increase in incentives to determine the feasibility of such an increase in incentives.

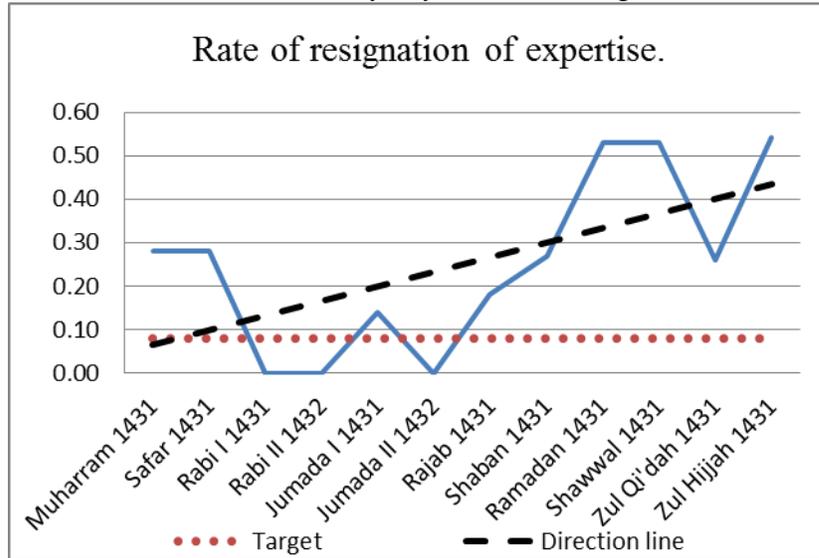


Figure 6.32: its shows the rate of resignation of expertise from the CCD.

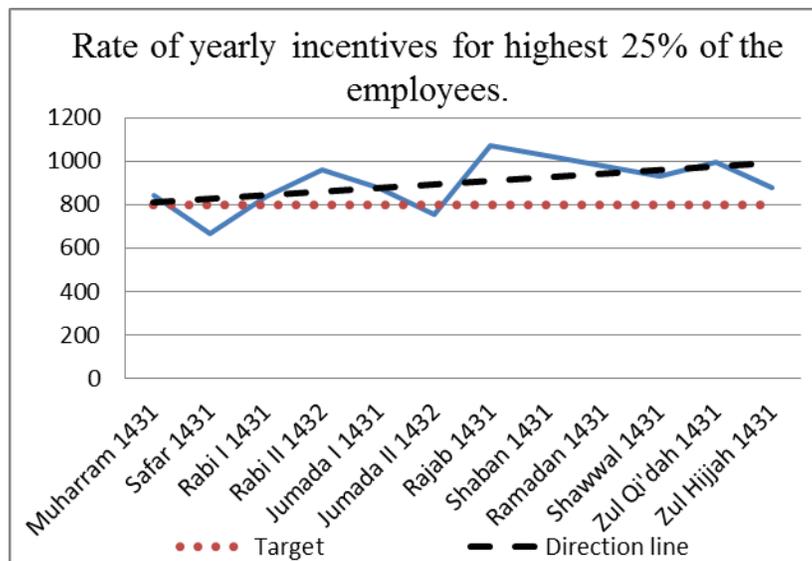


Figure 6.33: its shows the rate of yearly incentives for highest 25% of the correspondances employees at JM.

Perspective	KPI code	The KPI	Target	Muharram 1431	Safar 1431	Rabi I 1431	Rabi II 1432	Jumada I 1431	Jumada II 1432	Rajab 1431	Shaban 1431	Ramadan 1431	Shawwa 1431	Zul Qi'dah 1431	Zul Hijjah 1431	
Learning and growth	HR-L&G1-M1	Rate of training days for each employee.	0.33	0.29	0.18	0.16	0.11	0.12	0.08	0.25	0.08	0	0	0.12	0.02	
	HR-L&G1-M2	Rate of annual performance results for employees through ITQAN system.	3												3	
	HR-L&G1-M3	Number of competitors in the evaluation centers annually.	25			N/A			N/A			N/A			N/A	
	HR-L&G1-M4	Rate of general evaluation for administrative performances.	2.75			2.1			2.4			N/A			N/A	
	HR-L&G1-M5	Level of competency (360).	--						N/A						N/A	
	HR-L&G1-M6	Number of completed self-development plans (PDP).	30						N/A						N/A	
	HR-L&G2-M1	Employees' Satisfaction indicator using (JALOB).	3.5												3.46	
	HR-L&G2-M2	Rate of values measurement using (360) for the year (for dept. employees).	--						N/A						N/A	
	HR-L&G2-M3	Rate of monthly mistakes for each employee in the dept.	1	3	3	2	2	3	3	4	3	4	2	3	3	
	HR-L&G2-M4	Number of executed innovative ideas per year.	2			0			0			0			0	
	HR-L&G3-M1	Number of employees registered in the Leader of the Future program per year.	--												0	
	HR-L&G3-M2	Rate of resignation of expertise.	0.08%	0.28%	0.28%	N/A	0.00%	0.14%	0.00%	0.18%	0.27%	0.53%	0.53%	0.26%	0.54%	
	Learning and growth	HR-L&G3-M3	The percentage of gap in competencies in the department.	30%			N/A			N/A			N/A			4.63%
		HR-L&G4-M1	Number of developed BSCs for employees (PSC).	15			0			0			0			0
HR-L&G4-M2		Number of developed BSCs for managers (JSC) – (cumulative).	3			0			0			0			0	
HR-L&G4-M3		Rate of yearly incentives for highest 25% of the employees. (400 employees)	800	843	666	839	957	877	754	1071.43	1022.06	976	931	992	877	
HR-L&G5-M1		Number of success stories in the department used in Knowledge Center to be shared between the JM departments yearly.	--			0			0			0			0	
HR-L&G6-M1		Indicator of completion of technology infrastructure (devices, network).	--												N/A	
HR-L&G6-M2		Indicator of readiness and quality of electronic applications.	--												N/A	
HR-L&G6-M3		Indicator of competent employees in technology in the department (ICDL Start).	25			0			0			0			0	
HR-L&G6-M4		Indicator of activation of the technological environment in the department.	--						N/A						N/A	

The researcher tried to gather all the data to calculate all the KPI's but unfortunately, he could not for several reasons and constraints most of those reasons and constraints are mentioned before. Those reasons and constraints can be summarized as follows:

1. After the disaster of floods and flash floods that occurred in Jeddah on Wednesday 08/12/1430 - 25/11/2009, JM hurt and the normal work processes had been disturbed for the following explanations:
  - a. An extensive investigation was opened for studying the reasons behind this disaster, and the investigators requested a lot of data and documents from various sectors at JM, which led to halting work processes in those departments and sectors.
  - b. Firing a very large number of private sector employees (JM's contract employees). Moreover, some of consulting contracts were terminated in the same time also and did not renewal, which reduced the number of employees in many sectors and departments including the CCD.
  - c. Most of the development projects were stopped and most of the JM financial resources had directed to the central services sector in JM and Jeddah infrastructure projects. This was Impact the execution of CCD initiatives that were established to develop the department and its services.
  - d. Attack the media extensively to the JM and try to tarnish its image in the society and to highlight the disadvantages and defamation for all of the employee good and bad ones. This problem led to the Mayor to issued a circular urging employees to their work, not to engaged in the press and do not respond to the media. On the other hand, that led to stop the General Directorate of Strategic Marketing and Department of Public Relations and the Media in JM calculating the indicators that are related to the media such as customer satisfaction or complaints. In addition, it has broken the

contract between JM and the specialized company in the calculation of this type of surveys and media indicators and the lack of capacity within the department to carry out this role.

2. Another reason is that, some of these indicators are measured annually. Sense that it measured once at the end of the year, which means that by the end of 1431 H only one reading of these indicators had available. So, such single reading cannot be relied upon to analyze the indicator.
3. Another reason is that, according to the presence of an arbitrary bureaucracy in JM led to prevent the researcher from obtaining the required data. Since the changes in positions and persons in the JM reduce the cooperation and responsiveness where the support was provided from the previous head of this sector (Dr. Haitham Bogis). Since he left his position the disappearance of cooperation occurred between the researcher and the CCD manager.
4. In the mid-1431 H, some of JM's sectors were restructured where the CCD and Electronic Archiving were merged under one management or administration. Their for this led the CCD manager to request to review the department's BSC and its KPIs to include the objectives of the electronic archiving part although it's out of this thesis scope. Moreover, this section was stopped the actual work on the electronic archiving project several times because most of the causes mentioned above.
5. Some indicators are difficult to measure manually based on their equations. Moreover, these indicators supposed to be measured electronically when the current system will develop from its current status (semi-electronic system) to the fully electronic one which linked with Outlook. In view of this development does not occur until the end of year 1431 H because of some of the obstacles mentioned above, the researcher could not measure it. CTS – P1- M2, CTS – P2- M3 and CTS – P3- M2 are examples of this KPIs type. These indicators have been developed because the effectiveness of the CCD's BSC is five years and it has been expected that the system development project will finished during the first year and then these indicators will be activate in the next four years. Note that, the measurement of these indicators is outside the scope of this thesis because of the length of the duration time for activate the developed system where that might delay the end to this study and exceed the limitation time (full year or more to activate the new system in its natural form).

#### 6.10.2 KPIs Designing and Calculations Example:

To explain the method that followed in the design of the indicators and method of calculating the readings values of it, the researcher will explain here one example from the previous KPIs. CTS – P2 – M2 which is the Average age of physically assigned transactions without being received by departments on CTS, will be the explanation example that will describe in the following.

The second strategic objective in the internal processes prescriptive was CTS – P2 : Improving the efficiency of the Correspondences system. This system has two sections. The first part is the electronic one which is called the CTS system. While the second part is the working system which means the working rules, regulations, procedures and workflow. To measure the achievement of this objective, some KPIs are needed to measure the working system efficiency improvement. In addition, some KPIs are needed to measure the efficiency improvement of the electronic system part. So, to measure the the improvement efficiency of the CTS system was measured by three out of seven KPIs are used in this objective measurement. One of those three KPIs is the Average age of physically assigned transactions without being received by departments on CTS. After the KPI name is selected and its purpose of existence is clarified within one of the CCD's BSC development meetings, the researcher Worked on the formulation of the KPI's definition and the initial development of its equation. At a subsequent meeting the team was discuss that formulated definition and the formula agreed upon become: "Measures the average age of transactions to know the transactions that in the late receipt, which has been received actually through paper to their assigned departments without electronic receive on the CTS. It's used for measuring the departments commitment to the electronic transactions transmission deals through the CTS.". Then at the same meeting it Was agreed on the following:

- Measurement equation to become:  
= Total ages of assigned transactions from the CCD and haven't been received during the limit time / total number of assigned transactions that haven't been received during the same period.
- Weigh of indicator compared to goal which is equal to 15 % of the objective weight
- Source of information is Cognos system.
- Unit of measurement is days.
- Period of measurement which is monthly.

And all the other properties were defined and agreed upon as they are shown below in figure 6.34. Then, this card was reviewed with other KPIs descriptive cards by the team after the researcher fill the data to complete this KPI's card and put it in the formula as set below in figure 6.34.

**CTS - BSC: Indicator card.**

<b>CTS – P2 – M2 : Average age of assigned paper transactions that hasn't been registered on the CTS system</b>			
<b>Strategic Goal</b>	<b>CTS – P2</b>	Improving the efficiency of the correspondences system	
<b>Weigh of indicator compared to goal</b>	15 %		
<b>Definition of Indicator</b>	Measures the average age of transactions to know the transactions that in the late receipt, which has been received actually through paper to their assigned departments without electronic receive on the CTS. It's used for measuring the departments commitment to the electronic transactions transmission deals through the CTS.		
<b>Measurement equation</b>	$(\text{Total ages of assigned transactions from the CCD and haven't been received during the limit time}) / \text{total number of assigned transactions that haven't been received during the same period}$		
<b>Source of information</b>	Cognos system.	<b>Cumulative (Yes/No)</b>	No
<b>Unit of measurement</b>	Days.	<b>Level of target</b>	Maximum limit is one working day.
<b>Period of measurement</b>	Monthly.		
<b>Polar ( direction of Indicator)</b>	Negative.		
<b>Level of geographical measurement (Province / City / Municipality / district)</b>	JM.		
<b>Indicator in Province of Jeddah BSC</b>	Provide Municipal services of high quality.		
<b>Owner of Indicator</b>	CCD.		
<b>Responsibility of indicating the level of target</b>	The General Administration for Administrative Correspondences and Electronic Archiving.		
<b>Responsibility of providing data</b>	IT Department (employees in charge of CTS and Cognos systems).		
<b>Responsibility of calculating the indicator</b>	CCD.		
<b>Responsibility of auditing</b>	The General Administration for internal auditing.		

Figure 6.34: its shows the descriptive card of the indicator of average age of assigned paper transactions that have not received on the CTS system (CTS – P2 – M2).

After that, this KPI's data were gathered using the cognos reportes and CTS extracted data. To calculate this KPI the resuarher assumed that, Muharram 1431 H was the starting point which means that all unregistered transactions before that month was egnred which means the total number of unregistered transactions on the CTS for the first of Muharram 1431 H was equal to unregistered transactions for this day only and so on. By the end of each month the resuarher was reading the number of unrecived or unregistered transactions on the CTS with the age of each on for the extracted file of the CTS as shown in figure 6.35. after that the resurher caculated the average age for each month using the Pivot table in Excel and the KPI equation. That was habend because in early 1431 H the Cognos reports contains some errors. In addition, its not provide all the required reports at the beginning of the program activation. The researcher relying on the Cognos reports in recent months of the year where the form of reports, as in the figure 6.36.

Figure 6.35: its shows the extracted data from the CTS system for physically assigned transactions by CCD without being received by other departments on CTS to calculate the average age of them monthly (this file was for Zul Hijjah 1431).

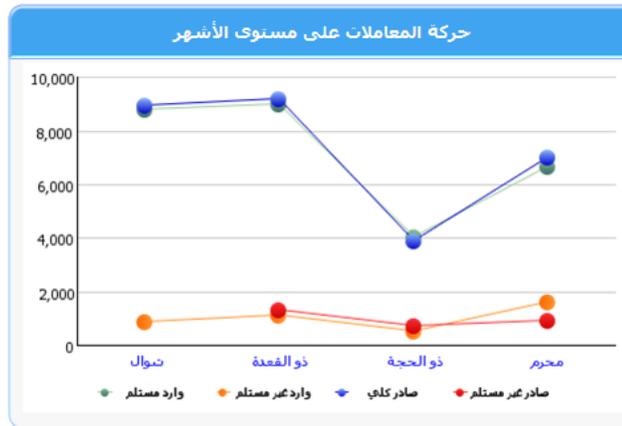


Figure 6.36: Example of monthly tracing for a department outgoing and incoming transactions by categories from Cognos system. The red line represents not received transactions for each month.

Next, the KPI equation was applied monthly and the results comes as in table 6.9. these results were monthly filled in the KPIs spreadsheet (Appendix VIII) where parts of it were represented in tables 6.6, 6.7 and 6.8. so, for example for Muharram 1431 H that equation was applied as following:

$$= (\text{number of not received transactions at day 1} * 30) + (\text{number of not received transactions at day 2} * 29) + \dots + (\text{number of not received transactions at day 30} * 1) / (\text{number of not received transactions at day 1} + \text{number of not received transactions at day 2} + \dots + \text{number of not received transactions at day 30})$$

$$= ((0*29) + (11*28) + (4*27) + \dots + (0*1)) / (0 + 11 + 4 + \dots + 0)$$

$$= 1707 \text{ days} / 108 \text{ transactions} = 15.805 \text{ days} \approx 16 \text{ days.}$$

That means the average age of physically assigned transactions from CCD without being received by other departments on CTS at Muharram 1431 H was equal to 16 days. Then, it was calculated monthly starting from Muharram 1431 H till the last day of each month by the end of that month.

Note: Here the equation start with 29 not 30 because that month have 29 days only according to Umm Al-Qura Calendar

Table 6.9: the Average age of physically assigned transactions for CCD without being received by other departments on CTS.

Month	Muharram 1431	Safar 1431	Rabi I 1431	Rabi II 1432	Jumada I 1431	Jumada II 1432
Value	16	29	34	37	22	45
Month	Rajab 1431	Shaban 1431	Ramadan 1431	Shawwal 1431	Zul Qi'dah 1431	Zul Hijjah 1431
Value	66	79	103	118	123	137

After that, the data for this KPI were analyzed using Excel and its results were shown in figure 6.24 And these results were discussed in advance.

## **6.12 Conclusion and Recommendations:**

After testing and analyzing the available indicators, the researcher prepares his conclusion and recommendations for those results. Those recommendations were proposed by the researcher to improve the CCD employees' productivity, develop the work procedure and processes in CCD, and to reduce the resistance to the development processes at this department. The recommendations are as follows:

- 1- Review the CCD's strategic objectives according to the department new structure and the current status of JM.
- 2- Review the current BSC with the CCD's employees and discuss the department strategic objectives with them and take their comments and notes on it. Then modify what is needed to based on what was agreed with them.
- 3- Approve the amended BSC by the JM mayor and the head of sector.
- 4- Development of initiatives necessary to achieve the strategic objectives of the CCD.
- 5- Providing the Financial cash flow for the development projects and initiatives needed to achieve the CCD's strategic objectives.
- 6- Human Resource availability with the required competencies according to the CCD strategic plan and objectives.
- 7- Review all the PKIs of customers' and internal processes' perspectives to commensurate with the amendments to the Department's BSC and its strategic objectives.
- 8- count the common administrative mistakes in the CCD and cradt a small work team within the department headed by the CCD manager and the membership of some distinguished members of department's employees to study that mistakes and the corrective actions to avoid them. In addition, its could be among the solutions to make some new developments on the electronic system to avoid such mistakes.
- 9- Contract with a specialized company in the measurement of such customer satisfaction indicators to activate the KPIs that are related to measuring customer satisfaction objectives.
- 10- Coordinating with the authorized managers and employees at JM for activating the unactivated KPIs in the CCD's BSC.
- 11- Review of indicators of customers' and internal processes' perspectives commensurate with the amendments to the Department's BSC and strategic objectives.
- 12- Development of the Department workflow in the receipt and delivery of paper transactions, as proposed diagram below:
  - a. For incoming transactions (figure 6.37).
  - b. For outgoing transactions (figure 6.38).

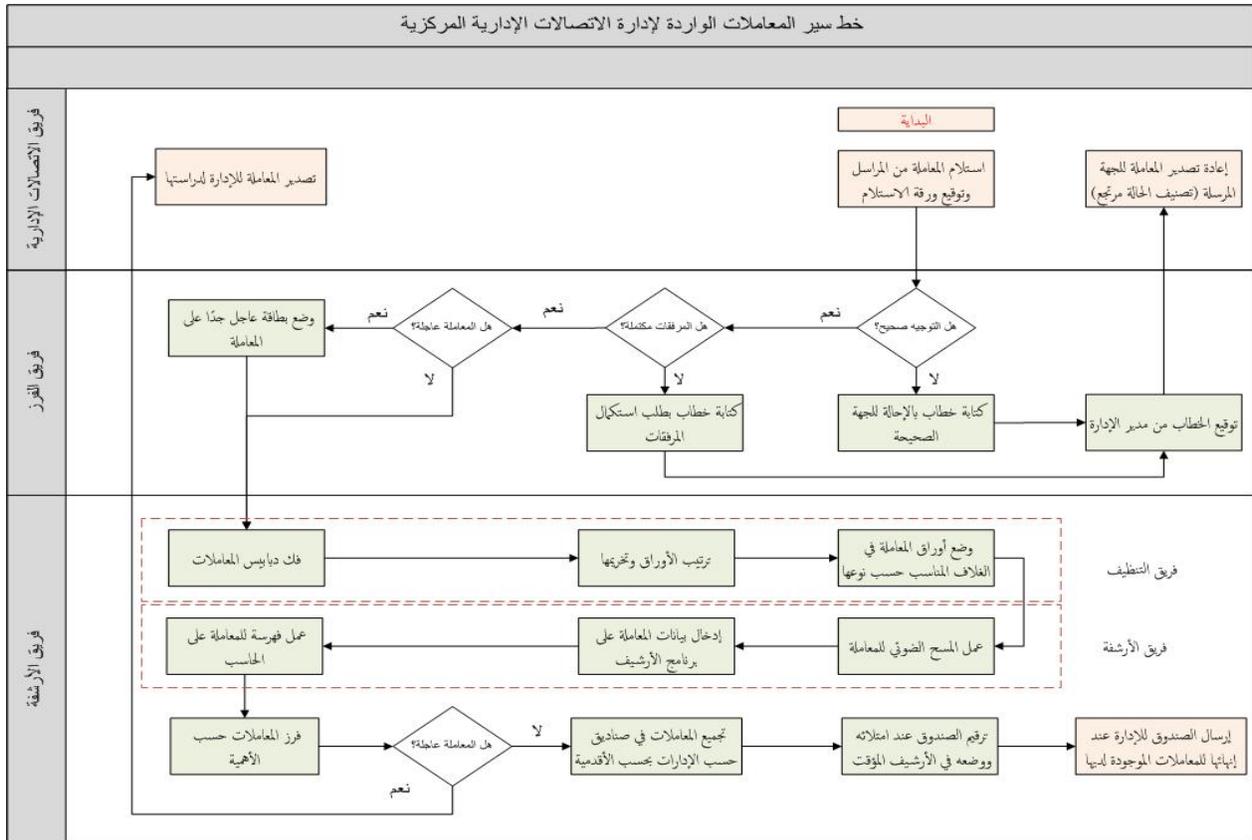


Figure 6.37: it shows the recommended workflow for incoming transactions to the CCD. Moreover, it's divided by the recommended teams and work groups within the CCD.

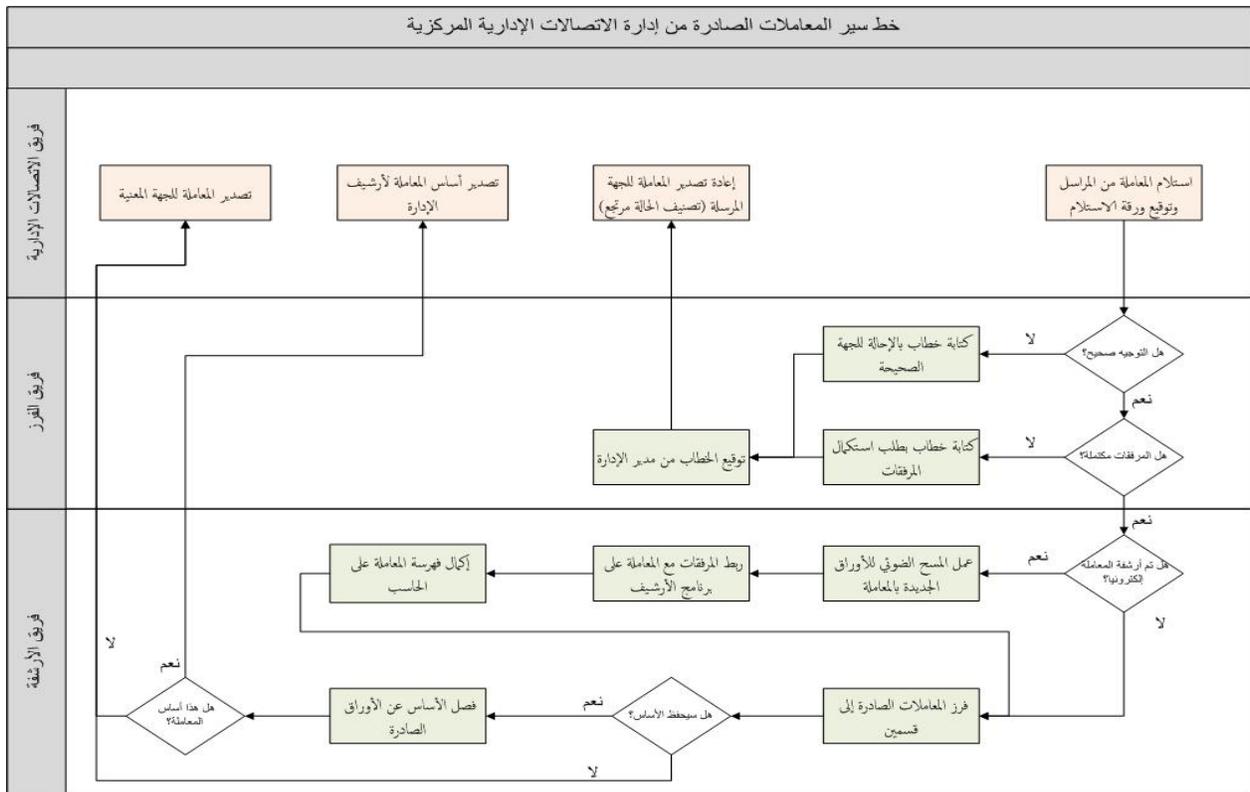


Figure 6.38: it shows the recommended workflow for outgoing transactions from the CCD. Moreover, it's divided by the recommended teams and work groups within the CCD.

- Develop a system of punishment and apply it to whom is spoofing on writing the transactions notes in the note field on the CTS by writing some unintelligible numbers, letters, or phrases such as 0, spaces, or duplicated letter just like the XXXX, and so on. this can be observed by the internal auditor in CCD where he should make a monthly report showing such errors. Moreover, this report should contain names of the users who entered such notes in the CTS system and the percentage of repeat this on a monthly basis.

## Results and Conclusion

This section will provide a brief summary of the research findings regarding the study main goal and other objectives. Additionally, recommendations for future work will be discussed.

After studying the rate of resistance to change for the correspondence employees at JM, the researcher can conclude that there is a second degree resistance (low resistance) out of four degrees. This means that the power of the resistance from the correspondence employees is about 25% as shown in figure 7.1 below. Based on this, the researcher tested the ten factors that were mentioned in the objectives of this thesis to know if any of them had a relationship with the resistance to change. Therefore, according to the study questionnaire's analysis the following was found:

- There are positive relationships between the resistance to change and two factors, which are the employees' educational levels and the organizational support for employees to develop through training.
- There are negative relationships between the resistance to change and three factors, which are the employee's job satisfaction, the promotion of a culture of development in the organization, and the employee's acceptance of the concept of development.
- There is no relationship between the resistance to change and four factors, which are the employees' ages, the job types, the years of experience, and the employees' contribution in the development process from the beginning.
- There is a relationship between resistance to change and the marital status. In addition, according to figure 5.26, it's observed that singles are more resistant to change than the married.

Most of these results were supported by the results of other similar studies as mentioned in chapter V.

Furthermore, some of the KPIs of the CCD's BSC are related to measuring the resistance to change as well. As mentioned in chapter VI some of these KPIs were not activated and some have annual measurements which means only one reading by the end of the testing year (year 1431 H). So, the results obtained are based on the available readings of some of those related KPIs to the resistance to change measurement which is that there is resistance to change for the current CTS system and upon the current rules, regulations, and workflow of the CCD from the correspondence employees. This resistance appears in the results of the KPIs that are measuring the following:

- CTS – C1 – M3 & CTS – P2 – M1: the percentage of returned transactions due to administrative errors.
- CTS – P2 – M2: the average age of physically assigned transactions without being received by departments on CTS.
- CTS – P2 – M4: the percentage of employee's commitment to work's procedures (writing of notices).
- HR – L&G2 – M3: the rate of monthly mistakes for each employee in the depart.

Moreover, the researcher couldn't get the rate of this resistance through using these KPIs results as it rated by using the questionnaire results. On the other hand, these KPIs results are useful in tracking the rate of decrease of resistance to change during the year. In addition, the rest of the KPIs are useful in tracking the rate of improvement that of the development processes or the initiatives of reducing this resistance to change.

## Limitations and recommendations for future work

Due to sampling approach adopted in this research, the findings cannot be generalized upon the Saudi public sector. Findings from this research can be used to conduct a study based on random sampling to generate results that can represent the Saudi public sector.

The findings from this research can be used as a starting point to investigate resistance to change potentiality in other environments.

The broad scope of this research is limited to the ability to gather and analyze in-depth data on particular aspects of resistance to change. Further studies could focus on solutions to reduce or eliminate the resistance obstacles in the Saudi public environments and suggest ways to overcome it and increase the possibility of development processes success.

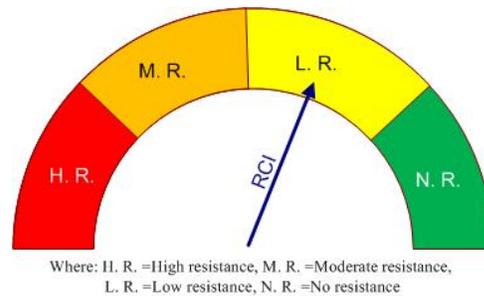


Figure 7: this figure been drawn to show the rate of resistance to change for the correspondence employees at JM.

A practical guide to reducing the resistance to change including a change management methodology that suits Saudi public sector can be developed and tested in future research.

Future studies made to validate the results of this study on the same target group used in this study. Studies can also occur on other samples from other jobs within the municipality or from any other governmental sector in Saudi Arabia to prove or disprove the relationship between the resistance to change and the ten factors that are mentioned in the objectives of this study. Furthermore, future studies can prove or disprove the relationship between the application of BSC and the reduction of resistance to change for development processes in a governmental sector. So, this research can be extended further by investigating the results produced by a related BSC with development activities to see the improvements on the results in the future.

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## **Biography**

**Mostafa F. Fawzy** is an Assistant Professor, in Industrial and Systems Engineering Department at University of Jeddah. He worked as an Instructor at School of Engineering, Northern Illinois University. He taught both graduate and undergraduate industrial engineering courses. Dr. Fawzy received a PhD in Industrial Engineering from Iowa State University in 2015. Dr. Fawzy was the Head of Education Department of Middle East Learning and Cultural Center. In addition, Dr. Fawzy worked in the consulting field as a development engineer and project manager for more than five years in the Jeddah Municipality and different consulting offices. His research interests are in the development of decision-making support systems for complex problems. Moreover, his research interests include lean principles applications, strategic planning, and performance enhancement.