CUSTOMER RELATIONSHIP MANAGEMENT FOR E-GOVERNMENT SYSTEM USAGE

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ABSRACT
Society, business and public administration is changing due to development of new technologies, Software, which empowers machines, Networking, which forms communities of machines and the New Media, which enables fast communication between man and machine. Furthermore an important role play E-government which is a set of online public services offered to citizens. These key technologies gradually reduce the importance of various gains on behalf of large monolithic organizations that were secured as a result of the industrial revolution and for this reason is needed the methodology Customer Relationship Management (CRM) which has been an integral part of the enterprise since two decades. CRM method makes relationship between E-government and citizens, businesses, employees, governments which can help to have predictive analysis in varying intensities and frequencies for using different services. This article is focused in relation between government and citizens (G2C).

Keywords: CRM, enterprises, E-government, industrial revolution, predictive analysis

1. CRM AND E-GOVERNMENT

Customer Relationship Management is defined as the strategies, processes, people & technologies used by companies to successfully attract and retain customers for maximum corporate growth and profit. It is about identifying, establishing, maintaining and enhancing relationships with the customers so that the objectives of both parties are met. The notion of forging intimate connections with consumers to understand the needs, references and potential of distinct market segments has also been a crucial driving force behind organizations' mounting emphasis on customer relationship management (CRM). Corporations look upon CRM as the means to identify profitable patrons, convert prospective clients and establish lasting strategic partnerships with beneficial business partners. For the firm it is said that customer retention can enhance profitability through benefits of lowered sales costs and increased revenue. In-fact CRM has been identified as a critical carrier of revenue growth. There is considerable interest in how customer relationships can be managed

more effectively since they are now regarded as one of the firm's primary focuses. However, there is no generally agreed approach to CRM; different scholars have recommended different approaches to CRM. For example, according to Payne and Frow [10], CRM unites the potential of new technologies and new marketing thinking to deliver profitable long-term relationships. Hamilton defines CRM as the process of storing and analysing the vast amounts of data produced by sales calls, customer-service centres and actual purchases, supposedly yielding greater insight into customer behaviour. The essence of customer relationship management is to understand the customer needs and leveraging that knowledge to improve company's long term profitability by customizing its offering on one-to-one basis. According to Swift [11], CRM is an enterprise approach for understanding and influencing customer behaviour through meaningful communications, in order to improve customer acquisition, retention, loyalty, and customer profitability. Therefore, from all these definitions, it is evident that the objective of CRM is to acquire and retain the customers by leveraging customer knowledge to offer better services and through influencing their behaviour in meaningful manner. The public sector is one of the most primitive and predominant service domains in any community, with a wide array of governmental services catering to all aspects of society and economy. Advancements in information and communication technology (ICT) have touched government agencies also and governments worldwide are embracing this technology to reach their constituents (citizens and businesses) and this initiative is known as E-government. E-government has been defined in a number of ways, mainly falling in two categories- techno-centric and government-centric with the former focusing more on technological or 'e' aspect and the latter on. [1]

2. DELIVERY MODEL AND ACTIVITIES OF E-GOVERNMENT

One of the primary delivery model of E-government:
- Government-to-Citizen or Government-to-Consumer (G2C)
  - In this model, the G2C model applies the strategy of Customer Relationship Management (CRM) with business concept.
  - By managing their customer (citizen) relationship, the business (government) can provide the needed products and services to fulfil the needs of customer (citizen).

Within each of these interaction domains, four kinds of activities take place:
- Pushing information over the Internet, e.g.: regulatory services, general holidays, public hearing schedules, issue briefs, notifications, etc.
- Two-way communications between the agency and the citizen, a business, or another government agency. In this model, users can engage in dialogue with agencies and post problems, comments, or requests to the agency.
- Conducting transactions, e.g.: lodging tax returns, applying for services and grants.
- Governance, e.g.: To enable the citizen transition from passive information access to active citizen participation by[9]:
  1. Informing the citizen
  2. Representing the citizen
  3. Consulting the citizen
  4. Involving the citizen

3. NON-INTERNET E-GOVERNMENT

While E-government is often thought of as "online government" or "Internet-based government," many non-Internet "electronic government" technologies can be used in this context. Some non-Internet forms include telephone, fax, PDA, SMS text messaging, MMS, wireless networks and services, Bluetooth, CCTV, tracking systems, RFID, biometric identification, road traffic management and regulatory enforcement, identity cards, smart

cards and other Near Field Communication applications; polling station technology (where non-online e-voting is being considered), TV and radio-based delivery of government services (e.g., CSMW), email, online community facilities, newsgroups and electronic mailing lists, online chat, and instant messaging technologies [3].

4. TECHNOLOGY-SPECIFIC E-GOVERNMENT

There are also some technology-specific sub-categories of E-government, such as m-government (mobile government), u-government (ubiquitous government), and g-government (GIS/GPS applications for E-government. The primary delivery models of E-government are classified depending on who benefits. In the development of public sector or private sector portals and platforms, a system is created that benefits all constituents. On behalf of a government partner, business provides what has traditionally, and solely, managed by government and can use this service to generate profit or attract new customers. Government agencies are relieved of the cost and complexity of having to process the transactions. Social is an emerging area for e-democracy. The social networking entry point is within the citizens' environment and the engagement is on the citizens' terms. Proponents of E-government perceive government use of social networks as a medium to help government act more like the public it serves. Examples can be found at almost every state government portal through Facebook, Twitter, and YouTube widgets. Government and its agents also have the opportunity to follow citizens to monitor satisfaction with services they receive. Through ListServs, RSS feeds, mobile messaging, micro-blogging services and blogs, government and its agencies can share information to citizens who share common interests and concerns. Government is also beginning to Twitter, etc… in different regions and within different agencies. Some government agencies are offering daily tweets of the specific subjects/updates which interested people can sign up for a large list of state agencies with Twitter or Facebook feeds, to visit and review Many government agencies want to and did connect their E-government systems to other government agencies and will use E-Shop, its new CRM system, as the catalyst for their plans. The CRM system would glue all services together with a citizen focus."In the past, citizens needed to tell 19 different people about bereavement". "But now, through systems such as CRM, you tell one and they all get to know. All different departments in the council will be able to share the information, meaning citizens will find it easier to deal with them." Some projects have also given government organisations the confidence to invest in developing technology specifically for the public services. Despite low national figures for online service usage governments are confident of achieving high levels of uptake amongst citizens after years of investment for providing E-government services [2].

5. HOW PREDICTIVE ANALYTICS WOULD IMPROVE CRM

By infusing CRM apps with new predictive analytics tools companies will be able to learn much more about their customers' buying habits and desires. And that will be a worthwhile bonus for any business or E-government organization. While CRM applications already collect terabytes of useful customer information, even deeper insights are on their way thanks to a developing new trend of predictive analytics capabilities being integrated into CRM. The big draw is that government agencies will be able to use existing CRM data to vastly improve critical one-on-one interactions with citizens. Another key benefit is that it will help E-governments to generate higher service quality when customers contact them by analysing incoming customer data in real time. All we've likely seen this within many corporations & companies when we buy something online and the vendor's web site displays other items that you might be interested in purchasing based on what you've already placed in your shopping cart. It's the same idea with CRM that includes add-on or built-in predictive analytics when a potential customer arrives at a company's web site to make a purchase, "If website offers this

product at this price at this time, are they likely to buy it? You make a targeted offer to a customer based on what they are shopping for. The likelihood that they accept that offer will determine if you can maximize customer retention, sales and profits." Within E-governments the target could be set to functionality & usefulness of the website or the provided services which directly would lead to customer satisfaction & a higher usage rate for E-government services. Predictive analytics being tied in with CRM is something showing up more and more in the marketplace as vendors respond to businesses that demand more from their CRM systems. For example, a customer contacts a company's call centre with an order question or a concern, then once the caller's inquiry is resolved, the call centre agent could be equipped to offer the caller some kind of special purchase opportunity based on their account information and prior purchases. All of this would all be visible on the call centre agent's screen. Similar benefits of CRM systems are already being used within the call centres of the E-government agencies. "We are seeing some of this CRM usage within E-government services now and we will see more of it in the close future as it is clearly visible the CRM systems usage within government agencies will enable entire E-government services to provide efficient and satisfying customer service to its citizens. The impacts are clear — as businesses could potentially see increased revenue by utilizing the customer data they're already collecting by using it more effectively E-government agencies will be improved according to needs of the citizens and this improvement will be seen within the higher success rates whiles increasing the customer satisfaction and usage of e-services. Another offshoot of this is that the CRM apps and predictive analytics tools are being connected more closely with social media platforms to help leverage information gathered from customers. That would allow broadening the CRM data so E-government can more effectively target their resources to citizens. In the meantime, as these kinds of predictive analytics features are introduced, agencies will need to figure out their approaches to implement the right ingredients into their own infrastructures. That will take research, detailed inquiries and discussions with teams from PR, IT and other departments, as well as research and more. It's not something you'll be able to jump into with little thought. You'll want to know your goals before you take the first steps so you can achieve adequate payback from your investments of time and resources. You need to be ready for this and make sure that your CRM system will be able to handle needed criteria's, in order to fulfil the demands of the citizens. Some agencies will offer predictive analytics as an embedded feature in their services, while others will offer it as an add-on to their existing services. Some older systems will have to be replaced, or there will be a need to analyse and find out if the existing system needs to have to license separate additional software and integrate it with your CRM to make this work. It's still in its well stages as CRM developers look to find new ways of mashing all these different tools together. There is still work to be done to find the best mixes of tools and data. The black art in all of this is determining how a human being is going to respond in predictive circumstances when they are presented with an offer from an agency [5].

6. PREDICTIVE ANALYTICS DIGS DEEPER INTO CRM

Bringing full predictive analytics into a CRM environment makes data actionable. Marketers can apply historical data from other campaigns, for example, to create predictive models to determine which prospects on a new list are most likely to choose/prefer, and which will not. [4,5]

7. LIVE ANSWER SERVICE

Live Answer Service Metric, a new, cloud-based analytic tool that provides actionable intelligence about call-answer rates. This system is being used by a large number of agencies. With Live Answer Service will be able to determine the exact number of calls that reach an

employee, regardless of which line the customer calls or how many auto-attendants are used to direct the call. In addition, users of this feature can take advantage of the many capabilities as:

- Use an easy-to-read dashboard to identify abandoned call rates & call volumes
- Compare results between main lines and employee extensions within the agencies.
- See how the agency's live answer rates compare to others
- Drill down on specific calls to understand each caller's experience
- Find problems and correct them immediately

I strongly believe that, this definitely will lead to improvement and development of the provided services in a more efficient way [4,5].

8. PREDICTIVE ANALYSES

This comprehensive lead generation and nurturing service includes a pre-built connected data mart that will support customer intelligence and multichannel campaigns to increase the performance. After collecting the feedback, the system algorithms analyse, interpret, categorize and qualify each customer mention to pinpoint urgent issues and anomalies and generate comprehensive performance metrics, set benchmarks and opportunities for growth or development. The real trick is to find the best predictive model for each government agency as all agencies are dealing with different procedures. This is a difficult problem, since there are so many options. There are many kinds of models, such as linear formulas and rules. And, for each kind of model, there are all the weights or rules or other mechanics that determine precisely how the predictors are combined. In fact, there are so many choices, it is literally impossible for a person or organisation to try them all and find the best one. Predictive analytics is data mining technology that uses your customer data to automatically build a predictive model specialized for the specifics of the operations or services. This process learns from your organization's collective experience by leveraging the existing logs of customer usage or applications, behaviour and demographics. The wisdom gained is encoded as the predictive model itself. Predictive modelling software has computer science at its core, undertaking a mixture of number crunching, trial, and error. Predictive analytics can generate agency rules that may make clear sense, or you could end up with a complex formula that is hard to decipher. The choice is up to each agency, keeping in mind that a simpler, more intuitive model may not perform prediction as well. The effectiveness of the predictive ranking is clear. With no predictive model and no means to rank users, there may be loss rather than success. A careful combination of predictors performs better user prediction by considering multiple aspects of the citizens and their behaviours. Predictive analytics finds the right way to combine predictors by building a model optimized according to the consumer data. Predictive analytics builds models automatically, but the overall operation process to direct and integrate predictive analytics is by no means automatic, it truly needs the sector expertise [3].

9. INDUSTRIAL REVOLUTION AND PRESENT DAY DIFFERENCES FOR CORPORATIONS

The Industrial Revolution grew more powerful each year as new inventions and manufacturing processes added to the efficiency of machines and increased productivity. Indeed, since World War I the mechanization of industry has increased so enormously that another revolution in production is taking place. Commerce and industry have always been closely related. Sometimes one is ahead and sometimes the other, but the one behind is always trying to catch up. World commerce grew and changed so greatly that writers sometimes use the term "commercial revolution" to describe the economic progress. Large monolithic organisations forward and backward integrated: covered entire line of businesses.

Corporates aimed at building large organisations. They change drastically the way business is performed today. The spread of industry, or machinery, or steam power, or the factory system itself was erratic. Late 20th century developments in technology are perhaps most responsible for this result/s. We know that technology supplies a constant stream of products that are "new and improved." We know that the moment we bring home a top of the line computer that within six months it will become not necessarily obsolete but "old." The first transformation to an industrial economy from an agricultural one, known as the Industrial Revolution, took place from the mid-18th to early 19th century in certain areas in Europe and North America; starting in Great Britain, followed by Belgium, Germany, and France. Later commentators have called this the first industrial revolution. The "Second Industrial Revolution" labels the later changes that came about in the mid-19th century after the refinement of the steam engine, the invention of the internal combustion engine, the harnessing of electricity and the construction of canals, railways and electric-power lines. The invention of the assembly line gave this phase a boost. Specially starting from the US around the 1990s these industries felt the need for use of technological methodologies such as CRM systems. Nowadays, it is solidly seen and accepted that even if it is a massive and global organisation, companies or businesses would not be able to survive with machinery & industrial tools only. As first and second industrial revolutions have passed with more of a machine/machinery age image; present day may mostly to call technological age and in order to have continuity in any sector or industry, companies and corporations experienced the adaptation and implementation stages of CRM and other similar development methods. After acceptance, the following face of the using these modern methods within their industries seems to be; having more efficient or developed models of the CRM systems in order to survive and compete in a keep developing dynamic market [6,7].

10. REFERENCES

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