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Monitoring and Optimization of E-Services in IT Service Desk Systems

Aayush Rai[1], S. P. S. Chauhan[2]
[1, 2]*School of Computer Science and Engineering, Galgotias University, Greater Noida, India*

Abstract: ***Information management systems have become the most important system for successfully growing firms. This paper gives techniques and tools for measurement and analysis of e-Services in IT Service Desk Systems. The subject of the research is to propose Business Intelligence tools for their monitoring and optimization. Object of the study are these e-Services. Therefore, the aim of this paper is to look into and analyze the performance of these e-Services in IT Service Desk Systems.***
Keywords: Business Intelligence (BI), QlikView, e-Services, ITIL, ITSM, SLA, Service Desk Systems

I. INTRODUCTION

Living in the era of continuously developing technology, business firms are dependent and supplemented to the enlarging customers‘ excitement for sufficient and agile IT solutions to their needs. The competency of the strategies for execution of IT solutions has a direct impact on managing organizational change [14]. At the same time, for the market development of Information and Communication Technologies have been indispensable by customers requirements [11]. Therefore, the demand for constantly monitored and well managed IT services are always high. Some factors such as retention and customer satisfaction have forced firms to construct a link between IT and business units, giving a single point of contact between IT specialists and end users. Now a days, one of the most common and preferred solutions are Service Desk Systems (SDS) for IT Service Management (ITSM). When assessing the needs of consumers, cultural essentials also should be taken into account. In the Balkan region, there are distinctly expressed particulars in the consumer needs - at both the end user and enterprise levels, users of IT services [12, 13, 15].

The paper provides techniques and tools for performance measurement, analysis and optimization of e-Services in IT Service Desk Systems. Object of the study are these e-Services. Topic of the research is to suggest Business Intelligence tools for their monitoring and optimization. Therefore, the motive of this paper is to find and analyze the performance of these e-Services in IT Service Desk Systems. The reality of the study is to determine the significance of the research problem. Now a days, businesses make a large number of orders, warehouse availability, data, broadcast and of course - customers. A huge amount of the corporate data is unused in the procedure of making management decisions. The hugely competitive business environment causes firms to repeatedly reassess their plans, and to abled to do that they need particular information at the correct time. This information changed into knowledge could expand profits, lowing costs and make management more effective. Originated from detailed real information, this knowledge is very important for attaining and conserving competitive advantage. To remain well influencing and agile between business demands and technology trends IT services management needs to evolve implementing Business Intelligence (BI) solutions.

II. E-SERVICES PERFORMANCE MEASUREMENT

A. The Concept of IT Service Desk Systems

Considering the fact that everything is truly information based, undoubtedly one of the most important assets that every organization has is the data and information they generate. In order IT departments to ensure the quality of e-Services they provide, SDS, also known as Ticketing Systems, are widely implemented. SDS are designed for collecting, tracking and processing requests for IT service support processes within a company [5]. They serve as a facilitator of relations between end users of IT services and the IT support staffs that provide them. As such they have to be regarded as an element of the broader process of establishing common IT standards within the corporation business applications for ensuring high quality and maximum efficiency of the IT operations.

Having introduced such systems, ITSM is a key part without which services could not be analyzed, improved and developed. ITSM is a process-based practice focused on aligning IT systems and services including IT Planning, Support, Delivery, Security and Infrastructure. ITSM is often guided by the IT Infrastructure Library (ITIL), a globally recognized framework of best practices for ITSM [3]. Whereas ITIL defines and documents the best practices, ITSM deploys them to meet clients’ requirements and expectations. One of the core objectives of ITSM is the definition of Service Level Agreement (SLA) and key performance indicators (KPIs) [1]. IT Service Delivery as part of ITSM is responsible for the execution of services in compliance with predefined time and quality parameters.

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B. Methods and Tools for Monitoring and Optimization of e-Services

Some dimensions commonly used for measuring the level of e-Services is the time-frame for request resolution [6], compared to the initially agreed one in SLA. Analysis of these results can be performed with QlikView, a software for visualization and BI [4] used for Data Mining [2], [7], etc. QlikView provides an advantage by allowing support teams to turn the collected data into accessible and meaningful information to business and management units. For the purpose of this study QlikView has been used for creation of reports and performance measurement. QlikView analysis of requests, collected from an IT service provider, compared to the targeted KPIs for resolution of requests within the contracted SLA are given below in Fig. 1.

C. Analysis of the Results

Customer perceptions for these tickets have also been evaluated trough customer satisfaction surveys and visualized with QlikView in Fig.2 and Fig.3. Obtained results can be used for further analysis of e-Services, their quality level and customer satisfaction.

Survey questions have been divided into four basic metrics for service evaluation: Q1-Quality, Q2-Time, Q3- Empathy, Q4-Overall perception. The average obtained results show values below the aimed ones (3.38; target >3.5) for customer satisfaction from the provided IT services. Although the KPI for requests delivered within SLA (Fig.1) is higher than the targeted value (96%; target >90%), from (Fig.2) we can see that the question corresponding to it is with lowest rates. This indicates that the business needs for speed of resolution and the targeted ones by the company do not match. As we can see from Fig.4 and Fig.5 the lowest survey rates have been given for October (2.83).

The average score of the values for the other months is closer to the minimum target value. Therefore the score for October, which is much lower, is the one that drastically downgrades the overall result. Response rate meter for the same month shows a good percentage of answered surveys- 50%, which is above the accepted level of trustworthiness. Therefore the obtained results can be treated as reliable and indicative for customer's evaluation of the service.

Analysis for October presents low scores for each question of request handling survey. The question regarding time factor is the one that has affected the overall satisfaction. If we check the SLA measurement for this month we can monitor values of only 87.93%. Requests that have not been delivered on time and have breached SLAs are the reason for the low survey score. Therefore further analysis of requests need to be performed in order the time factor and its behaviour over clients' perceptions to be investigated.

III. CONCLUSIONS

To remain agile and well leveraging between business demands and technology trends IT services management needs to evolve. Implementation of SDSs and continuous monitoring of their services and requests parameters are a must. QlikView is modern and preferred BI tool for visualization of results and data interpretation. The tool can be used for analysis of large data regarding quality of requests in SDS, the factors that affect customer satisfaction and their retention. From the conducted measurements of client's perceptions has been concluded that time factor is most critical and important for clients, yet further examinations with QlikView need to be performed for more detailed results. From obtained results we have explored that the time frame for delivery of service is the factor that has the greatest weight over customers' perceptions. Continuous measurement of the average response and resolution times that the support team delivers to customers provides accurate glance over the quality of service. Providing support within the upper borders for agreed service levels standards, ensures agility and flexibility of service. It also provides greater visibility when problems arise. Monitoring of request resolution combined with customer surveys is the key for delivering high quality service and bringing value to the client.

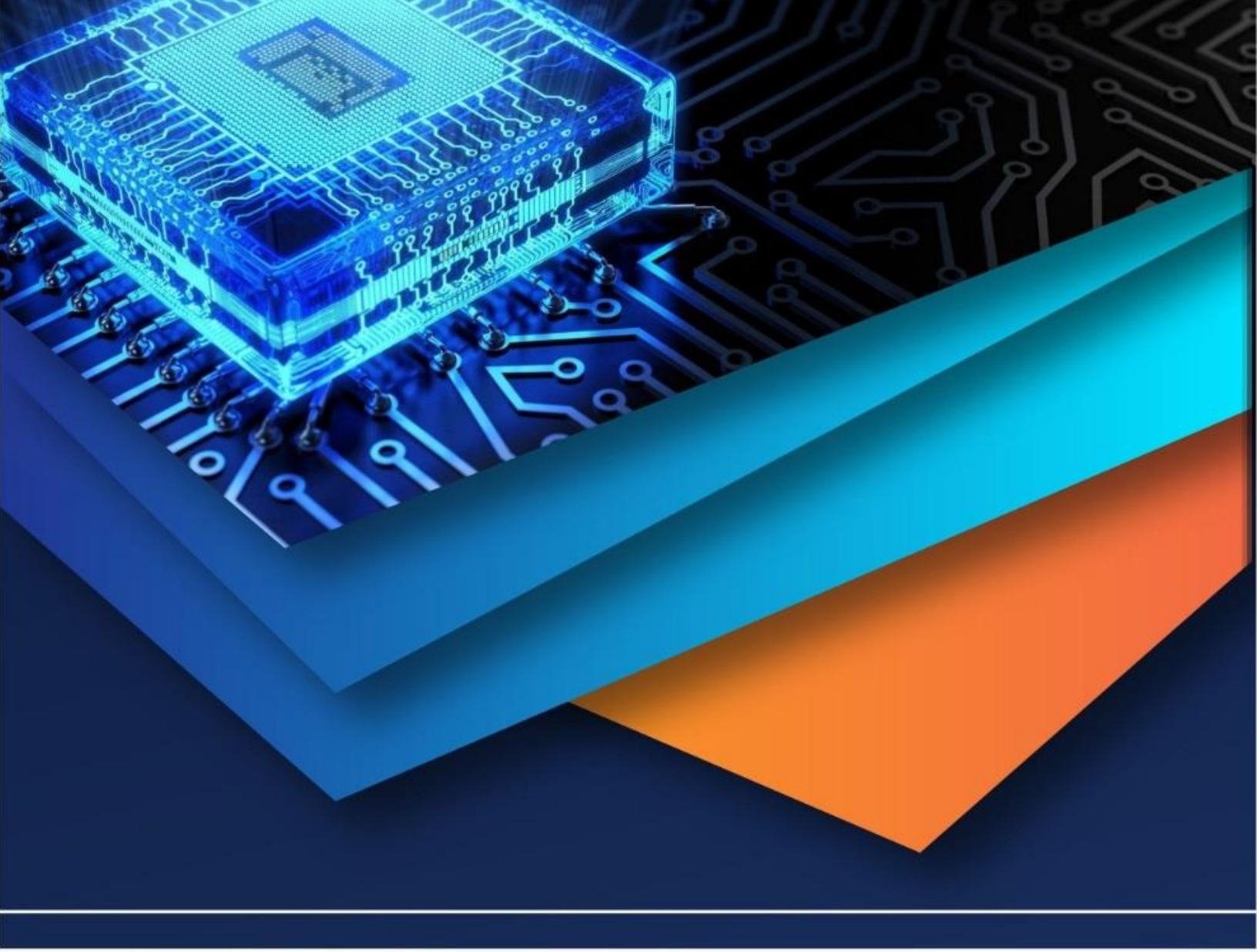
REFERENCES

[1] Wong. The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures, W. W. Norton & Company, Inc., 2013.
[2] F. Provost, T. Fawcett. Data Science for Business: What you need to know about data mining and data-analytic thinking, 1 edition, O'Reilly Media, 2013.
[3] ITIL V3 Application Support, Computer Aid Inc., 2008.
[4] M. Hugos, D. Hulitzky. Business in the Cloud: What Every Business Needs to Know About Cloud Computing, John Wiley & Sons, Inc., 2010.
[5] R. Hillard. Information-Driven Business: How to Manage Data and Information for Maximum Advantage, John Wiley & Sons, Inc., 2010.
[6] W. Eckerson. Performance Dashboards: Measuring, Monitoring, and Managing Your Business, 2nd Edition, John Wiley & Sons, Inc., 2010.
[7] Deliyska, B. and Rozeva, A., 2009, November. Multidimensional Learner Model In Intelligent Learning System. In 35TH International Conference "Applications of Mathematics in Engineering and Economics": AMEE 2009 (Vol. 1184, No. 1, pp. 301-308). AIP Publishing.
[8] Ivanova, M. and Ivanov, G., 2011. Communications in Computer and Information Science: Using Marker Augmented Reality Technology for Spatial Space Understanding in Computer Graphics. In Digital Information and Communication Technology and Its Applications (pp. 368-379). Springer Berlin Heidelberg.
[9] Tsankova, R., Marinov, O. ICT as a means for Open Government. Plenary paper keynote speech. IEEE Consumer Electronics Workshop on Consumer Electronics for Innovation and Employability. University of Bedfordshire, Luton, UK, 2014.

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[10] Andonova, A.V., Hinov, N.L., Thermographic analysis of a bridge power converter, Journal of Electrical Engineering, 65 (6), pp. 371-375
[11] Vojtko S.V., T.V. Sakalosh, Rynok informacijno-komunikacijnyx texnolohij: struktura ta analiz, Vydavnyctvo Livivsikoyi politexniky, Issue 594, 2007, pp. 384-392
[12] Alexandrova, M., Dimensions of the national cultural environment: Bulgarian evidence, KSI Transactions on Knowledge Society, Vol. 8, Issue 1, 2015, pp. 41-48
[13] Alexandrova, M., IT outsourcing partnerships: Empirical research on key success factors in Bulgarian organizations, Management: Journal of Contemporary Management Issues, Vol. 17, Issue 2, 2012, pp. 31-50
[14] Ivaylo Stoyanov, Information technology and managing organizational change, KSI Transactions on Knowledge Society, Vol. 6, Issue 1, 2013, pp. 10-13
[15] Bacali L, RC Cordoş, S Avasilcai, About ITC in the Romanian firms, Automation, Quality and Testing, Robotics, 2008. AQTR 2008. IEEE International Conference on, 2008/5/22, pp. 239-243

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