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Integration of Multi Bank-User in Single Card with User Behavior Monitoring Using HMM & Formula Verification

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Abstract: ***The world we live in today is becoming more money oriented by the second where people tend to carry around multiple credit and debit cards for their bank account. This is in a way tiresome and risky as cards tend to get lost easily. So why carry many around while you could carry only one. One smart card in which all the money in your different bank accounts are integrated together. Using special RFID like technology and a personal formula based authentication system set up by the user themselves, this ensures that even if your card gets lost or stolen, no one except you can use it. This consequently leads to Big data and Business analytics which would definitely lead to valuable knowledge for many organizations in the Banking Sector. All accounts of the user in other banks can be integrated in this single card with unique PIN numbers accordingly. User behavior is monitored through Hidden Markov Model and data is recorded accordingly.***.

I. INTRODUCTION

Information technology (IT) not only introduces convenience, but creates many new improvement opportunities which were impossible in the past. For example, advances of business intelligence (BI) methods and data mining techniques have brought huge improvements to modern business operations. Nowadays, in the “big data era,” a massive amount of data is available for all kinds of industrial applications. For example, the cloud service can be considered as a data warehouse which provides a useful source of data.

Wireless sensor networks [e.g., radio frequency identification (RFID), near field communications] can be used to collect useful data ubiquitously. An evolving topic on the Internet of things (IoTs), which consists of devices capable of communicating via the Internet environment, also provides a platform for gathering an enormous amount of data. In other words, it is now easier to collect data than ever before. That being said, extracting and utilizing useful information from such huge and dynamic databases for “big data” is far from easy. Since these data are linked to real-time events, they can be employed, if properly (e.g., via BI schemes), for rescheduling or re-planning activities in business applications which finally reduce the level of risk and improve profitability and efficiency of the operations.

With the exception of the extremely wealthy, very few people buy their homes in all-cash transactions. Most of us need a mortgage, or some form of credit, to make such a large purchase. In fact, many people use credit in the form of credit cards to pay for everyday items. The world as we know it wouldn't run smoothly without credit and banks to issue it. In this article we'll, explore the birth of these two now-flourishing industries.

II. LITERATURE SURVEY

A. Business Intelligence System

H. P. Luhn- An automatic system is being developed to disseminate information to the various sections of any industrial, scientific or government organization. This intelligence system will utilize data-processing machines for auto-abstracting and auto-encoding of documents and for creating interest profiles for each of the “action points” in an organization. Both incoming and internally generated documents are automatically abstracted, characterized by a word pattern, and sent automatically to appropriate action points. This paper shows the flexibility of such a system in identifying known information, in finding who needs to know it and in disseminating it efficiently either in abstract form or as a complete document.

B. Past, present, and future of decision support technology

J.P. Shim, Merrill Warkentin , James F. Courtney , Daniel J. Power , Ramesh Sharda , Christer Carlsson

Since the early 1970s, decision support systems (DSS) technology and applications have evolved significantly. Many technological and organizational developments have exerted an impact on this evolution. DSS once utilized more limited database, modeling, and user interface functionality, but technological innovations have enabled far more powerful DSS functionality. DSS once supported individual decision-makers, but later DSS technologies were applied to workgroups or teams, especially virtual teams. The advent of the Web has enabled inter-organizational decision support systems, and has given rise to numerous new applications of existing technology as well as many new decision support technologies themselves. It seems likely that mobile tools, mobile e-services, and wireless Internet protocols will mark the next major set of developments in DSS. This paper discusses the evolution of DSS technologies and issues related to DSS definition, application, and impact. It then presents four powerful decision support tools, including data warehouses, OLAP, data mining, and Web-based DSS. Issues in the field of collaborative support systems and virtual teams are presented. This paper also describes the state of the art ofoptimization-based decision support and active decision support for the next millennium. Finally, some implications for the future of the field are discussed. D 2002 Published by Elsevier Science B.V.

C. Business intelligence Solomon Negash

Business intelligence systems combine operational data with analytical tools to present complex and competitive information to planners and decision makers. The objective is to improve the timeliness and quality of inputs to the decision process. Business Intelligence is used to understand the capabilities available in the firm; the state of the art, trends, and future directions in the markets, the technologies, and the regulatory environment in which the firm competes; and the actions of competitors and the implications of these actions. The emergence of the data warehouse as a repository, advances in data cleansing, increased capabilities of hardware and software, and the emergence of the web architecture all combine to create a richer business intelligence environment than was available previously. Although business intelligence systems are widely used in industry, research about them is limited. This paper, in addition to being a tutorial, proposes a BI framework and potential research topics. The framework highlights the importance of unstructured data and discusses the need to develop BI tools for its acquisition, integration, cleanup, search, analysis, and delivery. In addition, this paper explores a matrix for BI data types (structured vs. unstructured) and data sources (internal and external) to guide research.

D. Novel approach to multi-agent reinforcement learning: Utilizing OLAP mining in the learning process

1) Mehmet Kaya, Reda Alhajj: Reinforcement learning is considered as a strong method for learning in multi-agent systems environments. However, it still has some drawbacks, including modeling other learning agents present in the domain as part of the state of the environment, and some states are much less experienced than others, or some state–action pairs are never visited during the learning phase. Further, before the learning process is completed, an agent cannot exhibit a certain behavior in some states that may be sufficiently experienced. This shows that learning in a partially observable and dynamic multi-agent systems environment still constitutes a difficult and major research problem that is worth further investigation. Motivated by this, in this paper, a novel learning approach that integrates online analytical processing (OLAP)-based data mining into the process is proposed. First, a data cube OLAP architecture that facilitates effective storage and processing of the state information reported by agents is described. This way, the action of the other agent, even one not in the visual environment of the agent under consideration, can simply be estimated by extracting online association rules, a well-known data mining technique, from the constructed data cube. Then, a new action selection model that is also based on association rules mining is presented. Finally, states that are not sufficiently experienced by mining multiple-level association rules from the proposed data cube are generalized. Experiments conducted on a well-known pursuit domain show the robustness and effectiveness of the proposed learning approach.

E. Building the Internet of things using RFID: The RFID ecosystem experience

1) Welbourne, L. Battle, G. Cole: At the University of Washington, the RFID ecosystem creates a microcosm for the Internet of Things. The authors developed a suite of Web-based, user-level tools and applications designed to empower users by facilitating their understanding, management, and control of personal RFID data and privacy settings. They deployed these applications in the RFID ecosystem and conducted a four-week user study to measure trends in adoption and utilization of the tools and applications as well as users' qualitative reactions

IV. EXISTING SYSTEM

In the EXISTING SYSTEM, Big data is really opportunity based environment. Big data analytics would definitely lead to valuable

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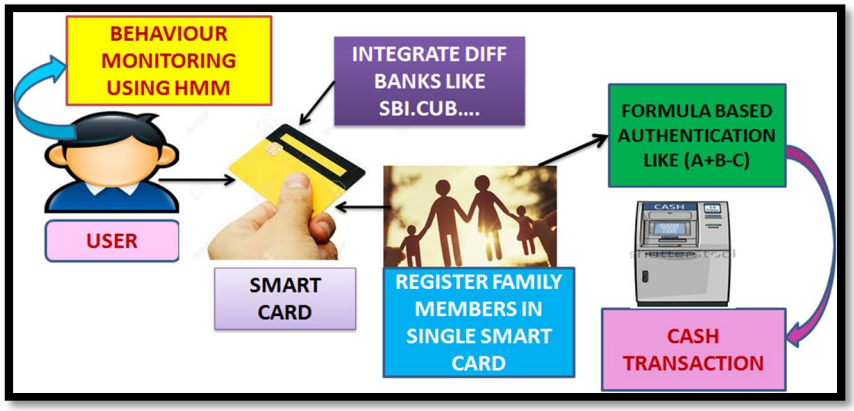
knowledge for many organizationsCloud computing promises a scalable infrastructure for processing big data applications such as medical data analysis. Cross-cloud service composition provides a concrete approach capable for large-scale big data processing. However, the complexity of potential compositions of cloud services calls for new composition and aggregation methods, especially when some private clouds refuse to disclose all details of their service transaction records due to business privacy concerns in cross-cloud scenarios. Moreover, the credibility of cross-clouds and on-line service compositions will become suspicious, if a cloud fails to deliver its services according to its ‘‘promised’’ quality. In view of these challenges, we propose a privacy-aware cross-cloud service composition method, named HireSome-II (History record-based Service optimization method) based on its previous basic version HireSome-I. In our method, to enhance the credibility of a composition plan, the evaluation of a service is promoted by some of its QoS history records, rather than its advertised QoS values. Besides, the k-means algorithm is introduced into our method as a data filtering tool to select representative history records. As a result, HireSome-II can protect cloud privacy, as a cloud is not required to unveil all its transaction records. Furthermore, it significantly reduces the time complexity of developing a cross-cloud service composition plan as only representative ones are recruited, which is demanded for big data processing. Simulation and analytical results demonstrate the validity of our method compared to a bench

V. PROPOSED SYSTEM

In the PROPOSED SYSTEM, Integration of Big Data, Business analytical and RFID like technology is supposed to be recent trends in IT. It is a challenge oriented activity. The modification, we are developing this system for the Banking sector particularly for a Debit/Credit ATM card section. We can use RFID smart card as ATM Card for transaction. User can create account and get the ATM card from the bank. He/she can integrate all his accounts in other banks in this single card with unique PIN numbers accordingly. User behavior is monitored through HMM Model and the user can set up a personal formula based authentication. Other family members' accounts details can also be added in the same card optionally. Cash can be withdrawn from their accounts after successful authentication of the corresponding PIN numbers.

VI. SYSTEM MODULES



VII. CONCLUSION

There is sufficient supporting evidence to conclude that data-driven approaches would be a growing research methodology/ philosophy in business operations. Countless application domains can be influenced by big data. BI systems are definitely on the list as such systems highly rely on the input data to generate valuable outputs. That being said, the scope of BI systems is so wide and related research involved the multidisciplinary knowledge. Hence it is not surprising that the research focal points have been scattered around different disciplines.

Consequently, it is not easy to generalize the results from previous studies. In this connection, emerging big-data-oriented research may need some adjustments. Data mining is still the core engine of BI systems but previous data mining algorithms are very application-oriented. This is not a criticism but an observation. The main reason is due to the nature of the data involved. So, soft computing techniques may be more applicable in this regard. In addition, coupling with the big data era, it may be the right time to think about mining ontology's, rather than just algorithm

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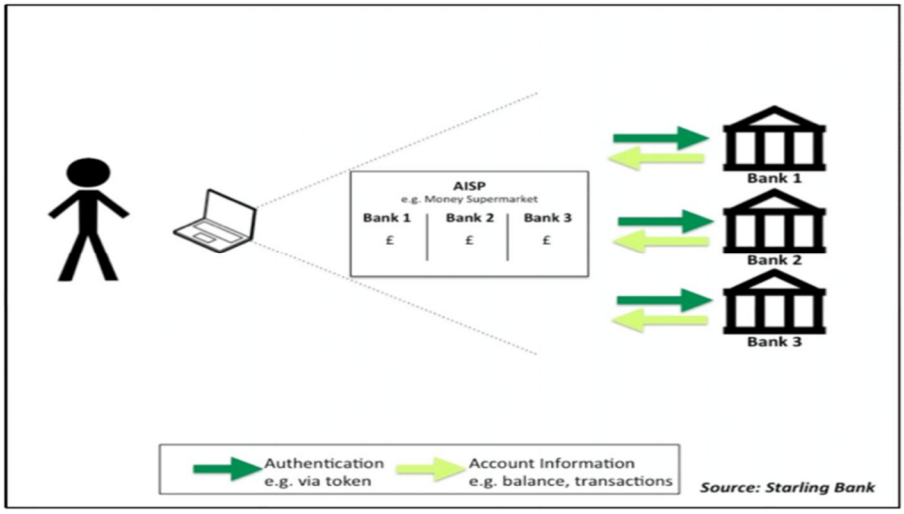

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