

Accounting Information System, Critical Review of Karim's 2014 Approach

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Introduction

This paper provides a critical review of V.R. Karimi, D.D. Cowan, and P.S.C. Alencar, 2014, 'An approach to correctness of security and operational business policies,' International Journal of Accounting Information Systems, ACCINF-00330, No of Pages 12. In this journal article, Karimi, Cowan, and Alencar suggested a new approach that can be used in operational and security policies in the business. The approach provided here can also be used to verify the correctness of operational and security policies with respect to a given set of properties. They propose a method that constructs definition of business operational and security rules based on REA business modeling language. This method is designed to use state machines to combine policy sets and policies automatically once the rules have been created. I find this new method to be very essential because it provides disciplined and systematic approaches that can be used in developing real world software systems for accounting purposes. In addition, this method has a higher potential of benefiting modern organizations in several ways.

Summary

Karimi, Cowan, and Alencar have done great work by proposing a new approach of describing business operational and security policies. In addition, the method proposed by the three authors can be used to verify the extent of correctness of business operational and security policies with respect to given properties. They propose a reliable method that is based on the modern REA business modeling language. The new method proposed by Karimi and his colleagues can effectively construct security and business operational definitions. However, for this method to work, the rules have to be set first. Once the rules are created, the method can automatically combine its representations into policies and policy set by simply using state machines. The authors have established that this is a quick and reliable method of defining and representing business operational and security policies (Jalote, 2005).

The new method proposed by Karimi, Cowan, and Alencar is designed to provide a well-disciplined and systematic approach in developing real world software system. This is a fundamental objective of software engineering. Without using a well-disciplined and systematic approach, software engineering would not provide a practical real world solution. This method is peculiar and different from other ad hoc approaches. The main advantage of this method, as explained by Karimi, is that it can benefit modern organizations in several ways. For example, the approach can be used to ensure that the business software meets the specific goals and requirements of an organization. It can be used to ensure the business software works correctly, and in according to the expectations of the organization and stakeholders.

Because of its ability to provide guarantees, this method is highly useful when dealing with large and very complex modern software applications such as the Enterprise Resource Planning (ERP). As explained by Asea and Kim (2009), these modern software applications are designed to provide thousands of controls, all of which need to be properly managed. The new method proposed by Karimi and his colleagues becomes handy in managing thousands of control requirements. The controls used by complex modern software applications have a diverse range of aspects. Some of these are related mostly to the internal business processes of the organization that requires proper operation and access controls. Karimi, Cowan, and Alencar proposed a reliable approach that can be used to integrate this into business software. The method's stronghold is its ability to manage effective controls.

In this journal article, Karimi and his colleagues provide an approach that can effectively ensure correctness of various types of business policies that involves access control of organizational and security processes. In a more generalized term, the method proposed by these three men is meant to bridge the current gap that existing between the corporate accounting world and the software world. The software world is particularly supported by certain formal mathematic models, which need to be accurate and correct at all the times. In overall, Karimi and his colleagues proposed a formal method that can evaluate and specify business policies used in ERP and other related fields. This method is developed to benefits business practitioners who want to make sure that have sound access control of their business policies (ICSECS Et Al., 2011).

From the standpoint view, the proposed approach is designed to alleviate several problems such as dissemination and unauthorized control access in business operational processes. These two problems are increasingly becoming major threats in modern business information because no reliable method has been found to help alleviate them. There have been trials in how to solve these two problems in large business software such

as Enterprise Resource Planning. To make matters worse, these two problems often leads to higher cost and disastrous consequences in business software application. In addition, the available real world business enterprise applications present a lot of complexity even to the end user. The manual checking system, therefore, becomes infeasible due to the software complexities. However, this new proposed method would eliminate these complexities, thus making software user-friendly in the business.

In software engineering, corporate operational policies are meant to describe who can perform certain actions on certain objects. Sometimes corporate operational policies become problematic particularly when they are being implemented in enterprise software solution for businesses. In particular, corporate policies that are incorporated across financial institution and enterprise resource planning (ERP) system often get troublesome because a large portion of the policies is buried within the software itself thus hiding it from the usual human scrutiny. This actually makes it impossible for humans to scrutinize regularly what is taking place within the software application. Problems are also realized during mergers and acquisitions as firms realize the need to confirm the correctness of the amalgamated policies. These have been ongoing challenges in enterprise software applications. There is hope in the new method providing ample solutions to these problems.

Conradi and Wang (2003) illustrates that testing has been used as a mechanism of providing confidence in the correctness of the policy of enterprise software implementation. The main challenge of testing is that it provides a limited confidence level because it cannot provide 100% software correctness. Although testing may show that the software is reliable because it has passed the test, it cannot show whether the implementation has achieved overall correctness. In other words, testing cannot be used to confirm the correctness of an enterprise software application. This is where the new method proposed by Karimi, Cowan, and Alencar comes handy because it can be used to determine the overall correct behavior of software at any given situation. Testing only shows the presence of errors in software application, but not their absence. The new method thus provides safeguards for deciding what policies may permit to make sense.

In summary, the new method provided by Karimi, Cowan, and Alencar is based on Resource-Event-Agent (REA) model. McCarthy and his colleagues developed this model in the business and accounting community as a method of describing business system. The model uses a very simple concept that only requires rules to be correctly described in the REA system. Once the rules have been described, state machines use them to form policies, and policy sets use them. The total model is then encoded and subsequently provided as input to the business software tool through a process called SPIN model checker. The access controls are then written in English before being translated into simple mathematic logic forms. The properties are then classified into various patterns of relevance that can be verified against set policies (Conradi & Wang, 2003).

Critique

There exist a lot of things to appreciate concerning the new method as proposed by Karimi, Cowan, and Alencar. For example, this method has been designed to provide disciplined and systematic approaches in developing real world software system for business solution. This is very essential because it is the fundamental goal of software engineering. Unlike the current approaches, a new method has an important advantage of benefiting the organization in many ways through reliable software applications. This is because the new method is designed to provide techniques that can guarantee the ability of the software to specific requirements of an organization. In addition, it guarantees that the software works correctly and meets the expectations of the stakeholders. This way, business will benefit greatly from the implementation of the new method.

According to Mall (2009), the main challenge that the new method would face is how to encounter effectively large and complex business software solutions such as enterprise resource planning (ERP). These software applications are more likely to provide challenging situation to a new method given their large and complex nature. Besides being large and complex in nature, these software applications present thousands of control requirements that might appear huge to handle. Despite these likely challenges, a new method is designed to cope effectively with every situation. In fact, this method is designed to effectively handle large and complex business software applications with much ease. It has the advantage of providing guarantees in dealing with complex software applications with many control requirements. It best integrates all the control requirements to make the software most effective.

Another significant strength of the new method is that it is designed to guarantee correctness of business policies. The previous methods have suffered the inability to guarantee correctness of the business policies. Most importantly, it provides correctness even in policies that require organizational process operation and access control security. With this ability, the new method has an additional advantage of bridging the gap that existed between corporate accounting world and software world that are supported by formal mathematical models. In essence, this new method provides the best approach of evaluating and specifying business policies in enterprise resource planning. For the standpoint of the real business perspective, a new method by Karimi and his colleagues would benefit practitioners by improving operational business policies and access controls (XP, Abrahamsson Et Al., 2009).

Another significant benefit of this newly invented method is that it helps alleviate problems that used to be associated with dissemination and unauthorized access control. These two are becoming serious threats in modern business information system, and there is a need to provide ample solution. The solution is now available in this new method proposed by Karimi and his colleagues. When not resolve, these problems can lead a business to costly and disastrous consequences. In addition, the new method works with large and complex policies, which, in essence, makes the use of manual checking very feasible. This was problematic with the previous methods, as they could not effectively integrate complex systems.

Lastly, the new method is that it has overcome the inherent limitations of testing as a means of confirming the effectiveness of software application. According to Jalote (2008), testing has limited ability of determining the correctness of business policy software. However, with the new method, there is no limit as it is designed to determine the correctness of business policy's software. This method actually goes aboveboard to confirm the correct behavior of the software implementation. It is able to identify the incorrect behavior and safeguard what policy can permit in order to make sense.

Conclusion

There is a need to have access control measures in business software application, which is guaranteed by the new method proposed by Karimi and his colleagues. The access control should be designed to allow the organization deny or permit the use of technical, as well as physical means of accessing data. Furthermore, the frameworks provided by the new method ensure that only authorized people, systems, and processes in the organization access critical data. Indeed, Karimi, Cowan, and Alencar did great work by proposing a new method that would benefits organizations in many ways. In summary, protecting confidential and sensitive data remains top priority requirement in any organization.

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