

“Enterprise Information”

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1. Prologue To The Paper

1.1 Introduction

With the progress of the world in technology and the existence of internet, and the businesses also have been pushed to the online platform in form of e-commerce. Further for establishment of these businesses, it is essential for the organisation to conduct diverse research and feasibility studies. With progress of the world, the data that is being collected by such organisations is also increasing in volume at a rapid pace. This is due to the adaption of businesses in e-commerce, and the abandoning of the traditional principle setting of a business. Therefore, the modern analysis of the organisations depends heavily on “enterprise information systems.”

The idea of an Enterprise Information System (EIS) has emerged from the need to manage the progressively unstable prerequisites of present-day landscape for the businesses. An EIS is a method, which shall assist in supporting and coordinating a wide scope of exercises across an association. On a fundamental level, the idea is valuable and pertinent to any huge and SMEs (Small - Medium Enterprises), international or public business association. Be that as it may, the scope of utilizations for EIS is developing and they are presently being utilized to help e-government, medical services, and non-benefit/non-legislative associations. This part audits research and improvement endeavors identified with EIS, and thus endeavors to definitely characterize the limits for the idea of EIS, i.e., distinguishing what is and what is not an EIS. In light of this area examination, a proposition for utilizing objective arranged displaying methods for building EIS is built; the proposition is made more concrete through delineation by means of a model.

1.2. Research Problems

The research problem present in front of the researcher for the project in hand is that of;

How does the concept of Enterprise Information practically function? What is the significance and the future of the same in today’s Business Environment?

1.3. Research Questions

The below are the research questions, that the researcher shall answer by the end of the final paper;

- ❖ To elucidate the concept of Enterprise Information.
- ❖ To understand the significance and application of Enterprise Information.

- ❖ To establish the critical issues and challenges faced in application of Enterprise Information.
- ❖ To predict the emerging trend, and the future of the concept of Enterprise Information.
- ❖ To analyse the tools, technology, methods and infrastructure required for conduction of the practice of Enterprise Information.

1.4. Research Methodology

The method for research opted by the researcher is “**Qualitative**”, as this research paper act as an analytical assessment and hence has utilized various renowned secondary sources of data collection to establish the topic in hand, and further expand upon the methods, infrastructure and the manner in which Enterprise Information is collected and utilized. Hence, the presence of such secondary sources, with the assistance of which the researcher has established the very concept of this paper, ensures that qualitative approach is maintained throughout the paper.

Scope:

Primarily the scope of the paper extends to the concept of Enterprise Information, and further the tools and technologies of enterprise information. Following the establishment of the same, the researcher shall elucidate on various other aspects of enterprise information, namely;

- a. Utilization and Application of Enterprise Information.
- b. Impact of Enterprise Information on the Originations and the Society in a broader aspect.
- c. Critical Issues and challenges faced for execution of the same.
- d. The Emerging Trends.

The above points shall be the Chapterization for the project, therefore the scope of the paper extends to the above aspects of Enterprise Information.

And hence, the utilization scope of this paper shall extend to any student, professional, or academicians who want to formulate a primary understanding on the concept, the function and the future of Enterprise Information.

Sources of Data Collection:

The method of data collection is secondary source, as the researcher has relied on the pre evaluated information and opinion from the various books, research papers, and website articles. Further to provide few instances or examples of the application of Enterprise Information, the researcher shall use the Annual Report of the required firm. However, since all the sources of data collection is secondary, and further on the basis of the nature of such resources, it is therefore concluded by the researcher that this paper has adopted the qualitative method of research.

Data Analysis:

The techniques of data analysis researcher would be using throughout the paper are that of;

- i. **Qualitative Analysis** – As the sole manner of research methodology in the paper is qualitative, the primary research analysis method for this paper has to be the qualitative analysis. The same shall be relied upon to establish the very concept of the paper, alongside answering the research questions.
- ii. **Trend Analysis** – Under the emerging trend segment of the paper, the researcher shall rely on a combination of trend and prescriptive analysis. As the researcher shall expand upon the future trends in relation to the practice of Enterprise Information.

Limitation:

The only limitation to this project, would be that since the researcher has analyzed on the basis of various secondary sources, the conclusion and interpretation of the researcher shall also be on the basis of the same. Therefore, the major limitation is that of accuracy as is the case, when there is a lack of reliance on primary source. Hence this paper shall be used for the purpose of understanding the concept in hand, however the reader is advised to conduct their own research, in case of further application of the concept.

Research Design:

The researcher has ensured to make sure that this paper shall stand Conclusive in nature. Despite the limitations listed above the researcher shall ensure providing conclusive analysis and interpretations, as the end result of the paper.

1.5. Review of Literature

The researcher has used the following literatures immensely;

- ¶1. The researcher has primarily relied on the academic published book titled; “Enterprise Information Systems: Concepts, Methodologies, Tools and Applications” (Information Science Reference, 2010). With the help of this book, the researcher has firstly established the meaning of all the basic concepts involved in the paper. The researcher has defined and explained the concepts of Enterprise Information & Information Systems, as these concepts establish the nexus of the paper.
- ¶2. The researcher has further utilized another academic publication titled; “*Enterprise Resource Planning and Business Intelligence Systems for Information Quality*” (Caserio & Trucco, 2018) The researcher has primarily utilized this literature in a holistic manner. This book provides opportunities for readers to explore and to apply theories to a wide variety of scenarios in which the application of Enterprise Information can be observed accordingly. However, with respect to this paper, the researcher has utilized the book to establish a general history and the basic principle of

facets of Enterprise Information, as they stand essential with respect to the concept in hand.

- ¶3. “*Introduction to Information Systems*” (O'Brien & Marakas, 2010) an academic publication, has been relied upon by the researcher to establish the basic distinction and application of the various types of tools and techniques of Enterprise Information. It further lays down the types of organization that would find the practice of Enterprise Information the most beneficial.
- ¶4. The researcher has relied on the research paper titled; “*Challenges in Enterprise Information Systems Implementation: An Empirical Study*” (Singla, 2010). One of the most important literatures with respect to this paper by the researcher has been the above stated paper. The author of the paper has offered a refined form of critical analyses of the concept of Enterprise Information, and has not restricted themselves from offering criticism towards the same. Therefore, the researcher has utilized this literature in a holistic manner to understand the challenges faced by the concept in the opinion of Mr. Singla.
- ¶5. The researcher has relied on the research paper titled; “*Enterprise Information System Security*” (Mazumdar, 2011). The researcher has relied on the stated literature in a holistic manner, to further expand on certain points with respect to the concept in hand through the paper. Primarily to raise the concern of security with respect to the enterprise information, the same has been elucidated in ***potential area of concerns(4.1.)***.
- ¶6. The researcher has relied on the research paper titled; “*A Federated Approach to Information Management in Grids*” (Mehmet S. Aktas & Fox, 2011). The infrastructure that contributes to Enterprise Information, is stated in a detailed and a practical manner in the above literature, and the utilization of the same has been done by the researcher in this paper.
- ¶7. The researcher has relied on the research paper titled A research paper titled; “*E-Markets as Meta-Enterprise Information Systems*” (Martin Grieger & Kotzab, 2008). One of the most important industry in terms of application of the practice of Enterprise Information, is that of E- Commerce. Therefore, with the help of the above stated paper, the researcher has reflected on the role played by E-Commerce in the circulation of the concept in hand.
- ¶8. The researcher has relied on the research paper titled; A research paper titled; “*The Future of ERP and Enterprise Resource Management Systems*” (Carlos & Ricardo, 2008). As far as the trend analysis is concerned with respect to the paper in hand, the above stated research paper is the secondary source of data that the researcher has utilized to project the various organizations / fields that would furthermore start relying on Enterprise Information. The researcher has utilized this resource primarily to project the scope of the concept in the near future, as well as this research paper has been further utilizing in a holistic manner for the suggestions that the researcher proposes.

1.6. Abbreviations

Full Form	Abbreviations
And	&
Enterprise Information Management	EIM
Enterprise Information Systems	EIS
Small and Medium Enterprises	SMEs
United Nations	UN

2. Enterprise Information: Understanding the Concept and Significance

In this chapter the researcher establishes *The Concept of Enterprise Information(2.1.)*, furthermore the *EIM & EIM: The Distinction(2.2.)*. Lastly, the *Significance / Need of Enterprise Information, EIM & EIS(2.3.)* is discussed.

2.1. The Concept of Enterprise Information

With the progress of the world in technology and the existence of internet, and the businesses also have been pushed to the online platform in form of e-commerce. Further for establishment of these businesses, it is essential for the organisation to conduct diverse research and feasibility studies. With progress of the world, the data that is being collected by such organisations is also increasing in volume at a rapid pace. This is due to the adaption of businesses in e-commerce, and the abandoning of the traditional principle setting of a business. Such data base of information collected and stored by an organization is what results in emergence of the concept of Enterprise Information. Hence, in simpler terms the information collected by an enterprise or an organization be it of any nature, if it holds importance and is further stored, then such a data base would be considered to be Enterprise Information.

2.2. EIM & EIS: The Distinction

EIM and EIS are two significant concepts of Enterprise Information, and are often led to confusion as to the meaning of the same. Therefore, for the clarity of the reader it becomes important to understand both the concepts properly.

EIM or “*Enterprise Information Management can best be defined as a set of technologies, processes, disciplines and practices used to manage an organization’s data and content as an enterprise asset. It’s not a new concept but its importance to large organisations is growing rapidly.*” (Opentext, 2021) So basing on the definition of Enterprise Information set in the previous section of the paper by the researcher, since the data base of Enterprise Information is huge to begin with, and further keeps expanding with time, the management of this data

becomes vital, to ensure the most optimum and efficient usage of the same. This management of Enterprise Information is known as EIM or “Enterprise Information Management.”

EIS or “Enterprise Information Systems as technology platforms that “enable organizations to integrate and coordinate their business processes. They provide a single system that is central to the organization and ensure that information can be shared across all functional levels and management hierarchies.” (Information Science Reference, 2010).

The basic distinction between EIM and EIS, is that of scope. EIM, deals with the management of enterprise information as a whole, whereas EIS is the tool that EIM uses to execute the same. Therefore, EIM has a wider scope than EIS, however, both the practices are truly essential for the other to be optimally conducted.

2.3. Significance / Need of Enterprise Information, EIM and EIS

The significance of Enterprise Information as a whole is multifaceted. The concept in hand is a source for development of any organization, information in general is of a such a nature that studying the same, or interpreting the same in a correct manner would lead to fruitful results. The similar is the case with any enterprise or organization, in order to expand, or at the very least breakeven, is becomes vital to firstly keep a record of such information, and secondly to utilise this information in which ever manner it benefits the company.

Now that the significance of Information is stated, the need for EIM stems from the same. Over a period of time, the information collected by the enterprise becomes too much of a burden, and if the same isn’t organized in a practical manner, it might not be able to be traced at hour of need. Therefore, an optimum management of the same is required. EIM is a concept that is used by the large enterprises; however, the researcher feels that projecting the future we are heading to, the same shall be started to ether be adopted by E-Commerce enterprises or a web-based program for EIM.

All these concepts are interrelated, and therefore the significance of each of them is also interrelated. As the need for EIS, stems from EIM, as to efficient conduct EIM, there is a fundamental requirement of EIS. Existence of EIS provides a firm with an element of flexibility, as the stored data could be accounted for, making such a practice time saving as well.

In conclusion, the researcher has explained the concept, scope and significance of Enterprise Information, EIM and EIS, in this chapter. Furthermore, the researcher has ensured to make a clear distinction between the concepts of EIM and EIS.

3. Elements of a Practice of Enterprise Information

In this chapter the researcher establishes the various elements involved in the practice of Enterprise Information, namely; ***Infrastructure(4.1.)***, ***Tools and Techniques(4.2.)***.

Collectively this chapter shall help understanding the three major elements of practice of Enterprise Information to ensure a peaceful execution of the same.

3.1. Infrastructure

General Infrastructure

The term infrastructure holds dual value with itself, as it not only refers to the infrastructure of the organization, but also expands to the internet infrastructure. Firstly, the infrastructure of an organization does not only refer to the facilities of the organization but also extends to the resources adopted for storage and interpretation of Enterprise Information. There are many factors that would influence the choice of facilities allotted for storage and interpretation, and the manner selected for the same, the top of these factors would be the finances, but it also extends to the nature of the business. If an enterprise is of such a nature where they have to indulge with a number of other companies on a regular basis, then they would ideally prefer a universal software for storage of data, as it could easily be shared if need be. However, its important to note that majority of the enterprises do not deal with the same other company on a frequent basis, and hence why entire practice of Enterprise Information is usually found to the challenging for the SMEs. The choice of chain of business is also impacted by the infrastructural discissions, as to how the information would be transferred with respect to BP and B2P would heavily differ and require more need of infrastructure for the same.

Internet Infrastructure

The UN, attempts to set a formulated guideline with respect to all the major fields, such guidelines are a model that are applicable universally. With respect to E-Commerce also, they attempted to do the same with “*Electronic Data Interchange for Administration, Commerce, and Transport (EDIFACT) (United Nations, 1999).*” (UNECE, 1999) However, the biggest flaw with such an initiative has been the internet infrastructure.

“The shortcoming of this generation of approaches like EDIFACT is in the fact that they require a significant programming effort from organizations to be able to use these standards. Thus, the cost will is higher for this reason. EDIFACT has just been used by small number of companies and was not allowed for small organizations.” (Aklouf & Drias, 2010)

The above situation is a clear example of poor internet infrastructure. Internet infostructure in simple terms is the structural reach of the provided platform. It is the designed reach and utilization allotted to a particular information control by the respected organization.

Hence, with respect to the practice of Enterprise Information, infrastructure and internet infrastructure play a vital role accordingly.

3.2. Tools & Techniques

Tools

The tools for the practice of Enterprise Information, are vital, as they assist in management of the same. There has been no shortage of tools for the practice, therefore it's all up to the choice of the organization, as to which tools would they find meaningful. The evolution with respect to the probable tools in the market has been at a great pace, and therefore the originations often do find this to be a challenge. *"It has also been observed that majority of progressive Indian companies are extensively using emerging tools like virtual supply chains, web services, RFID, and electronic commerce to shore up their supply chain operations."* (Nair, 2010) But at the same time, it is to be noted with the above cited statement that, modern tools like; "software agents and decision support systems for supply chain integration" are still very limited in terms of their preference by Indian Companies. There are further "self-service tools" which assist the managers to analyse the performances of not only their product but also their employees. However, it is always to be noted that all such tools are made with the single purpose of offering assistance, and no tool can be solely relied upon for the application of the same, at least as the technology stands today. Therefore, there is an integration of manpower also further required alongside these tools to offer the most optimum results.

Techniques

Just like tools, the techniques for the practice of enterprise information are also huge in numbers, and it's all up to the choice of the organization, as to which tools would they find meaningful. The evolution with respect to the probable techniques available for an organization has been at a great pace, and therefore the originations often do find this to be a challenge. There are a number of techniques, all of them can further be classified in many different groups, for instance the group of internet-based techniques would include; "Web mining, content-based filtering and collaborate filtering." Therefore, in terms of techniques, the researcher cannot project the same, as its something that would depend on the firm's operations. However, the following are few essentials on the basis of the understanding of the research, that are to be considered by a firm while selecting their form of technique;

- ❖ The maturity of their target market
- ❖ The dynamics and nature of the firm's business / operations
- ❖ The maturity of the firm's business (in terms of how long the firm has been established, their future goals and expectations)
- ❖ The choice of Infrastructure, and planning as to how to utilize the same.

These essentials might not be completely applicable to all the diverse types of businesses; however, it is impossible to find a tailor-made essentials list due to the uniqueness of all the diverse businesses. Nonetheless, in researcher's opinion the above list can be relied upon at least to narrow down the potential techniques for the organization.

In conclusion, the researcher has explained the major elements involved in the practice of Enterprise Information. These elements were namely; infrastructure, tools and techniques. All of them have their own individual set of significance, however it is also to be seen that all of these elements are all coexist able together, as only this will let the enterprise function in harmony. Hence, the choice of all of these diverse elements is vital, and have to be decided by an organization following thorough research into the same.

4. Scope for Future & Potential area of Concerns

In this chapter the researcher establishes the ***Potential Area of Concerns(4.1.)***. Furthermore the researcher conducts ***Scope for Future / Future Trends(4.2.)***. Collectively, this chapter highlights the other facets of this paper, by analyzing the drawbacks that exist in the present system, and further project the scope for the future.

4.1. Potential Area of Concerns

Security

With movement towards the internet be it in form of E-Commerce or the online software being utilized, the biggest area of concern is with respect to the security of the information being stored. *“Strategies for verifying authenticity for these data sources by individual actors are an important concern in the evaluation of overall system quality since, in addition to possibly misleading information acquired by actors, there is the danger of hostile external entities spoofing the system to acquire information accorded to trusted domain actors.”* (Mazumdar, 2011). To summarize the above statement, the concerns with respect to the security of enterprises information, is firstly that of information not been stored in a secure manner and there being a constant risk of the information being leaked to the general public. Secondly, the sources for information being on a digital platform leaves a constant risk of misleading information, the receiver not being completely aware as to the context of the received information, which can gravely contaminate the data base of enterprise information with the company.

Tools

While the progress of tools has been extremely beneficial, at the same time with adoption of software-based tools for enterprise information practice, there lies multiple concerns. There is a major restriction faced by enterprises to personalize such software as per their needs. This is a result out of the control that the software developers wish to have over their software. Another concern with the same is that, it leaves the practice of enterprise information prone to issues like; *“The software processes that are of great concern during the ERP implementation are requirements instability, scheduling and software maintenance.”* (Singla, 2010).

India being Traditionalist in their approach

“It has also been observed that majority of progressive Indian companies are extensively using emerging tools like virtual supply chains, web services, RFID, and electronic commerce to shore up their supply chain operations.” (Nair, 2010) The above statement summarized this concern as everything above stated is true, which is why its concerning that at the same time, it is to be noted with the above cited statement that, modern tools like; “software agents and decision support systems for supply chain integration” are still very limited in terms of their preference by Indian Companies.

4.2. Scope for Future / Future Trends

There is a lot of scope for the future, with respect to the practice of Enterprise Information in the future. The biggest trend that the researcher projects with respect to the concept in hand, is that of enterprise information would go through a huge number of implementation n the E-Commerce industry. This projection is very safe to make, as the same has been a trend that can be spotted globally in various other fields. With the rate at which E-Commerce industries are not only growing but also increasing in numbers, the competition is about to get really fierce, which is what would prompt the organizations to adopt various tools and techniques to practice enterprise information, as this would not only provide them with self-awareness as to their standing in the market, but also assist in competition with the rest of the competitors.

The second trend that the researcher would predict for the future would be that more and more organizations are going to adapt to a tool which is based on software. software’s provide a comforting edge to the organizations which is why they have been growing rapidly, it is easier to use the software, and more importantly its easier to store the same. The third trend is fairly similar to the previous projected trend, however this one is with respect to India solely. We are sometime down the future going to see an Indian E-Commerce giant, which would provide the service of EIM. Globally there are already some prestigious organizations which takeover a company’s EIM responsibility, however the same has not been practiced in India. Therefore, the researcher predicts that a future trend would be to have giant organizations managing the EIM of various enterprises at a time, this would really assist the SMEs as not only will it offer them some sort of guidance, but it also eliminates a tedious responsibility from their shoulders.

In conclusion, in this chapter the researcher has elucidated on the areas of concerns, as well as projected a few future trends with respect to the practice of Enterprise Information.

5. Conclusion & Suggestions

With the progress of the world in technology and the existence of internet, and the businesses also have been pushed to the online platform in form of e-commerce. Further for establishment of these businesses, it is essential for the organisation to conduct diverse research and feasibility studies. With progress of the world, the data that is being collected by

such organisations is also increasing in volume at a rapid pace. This is due to the adaption of businesses in e-commerce, and the abandoning of the traditional principle setting of a business. Therefore, the modern analysis of the organisations depends heavily on “enterprise information systems.” In this paper the researcher has explained the concept, scope and significance of Enterprise Information, EIM and EIS, in this chapter. Furthermore, the researcher has ensured to make a clear distinction between the concepts of EIM and EIS.

The researcher has explained the major elements involved in the practice of Enterprise Information. These elements were namely; infrastructure, tools and techniques. All of them have their own individual set of significance, however it is also to be seen that all of these elements are all coexist able together, as only this will let the enterprise function in harmony. Hence, the choice of all of these diverse elements is vital, and have to be decided by an organization following thorough research into the same. the researcher has elucidated on the areas of concerns, as well as projected a few future trends with respect to the practice of Enterprise Information, following the same, it can be stated in a conclusive capacity that there is a lot of scope for the future, with respect to the practice of Enterprise Information in the future.

Suggestions

Following the concerns that the researcher presented under the *protentional area of concerns(4.1.)*, the researcher has few suggestions that would help counter such concerns and further make the practice of enterprise information easier and safer for all the parties of the concept. Therefore, following are the suggestions proposed by the researcher;

❖ **Ability to Personalize**

With the spotted trend being that of, more and more organizations adopting tools in the medium of software to conduct the practice of enterprise information. It becomes vital for the companies to be able to customize and personalize these software as per their own person needs. This will not only help the company save time, make the entire procedure easier and ensure the process being efficient, but furthermore this would take away some control from software developers, which is important with respect to the information privacy. Hence, *the researcher suggests that organizations shall posses the ability to personalize the software with respect to their necessities.*

❖ **Smart Internet Infrastructure**

Internet infostructure in simple terms is the structural reach of the provided platform. It is the designed reach and utilization allotted to a particular information control by the respected organization. Therefore, it shall be vital for every firm to analyse and chose the respected internet infrastructure. Hence, *the researcher suggests that the organizations should start using a software to optimize their internet infrastructure, on the basis of their preference.*

❖ **More Optimum tool for information to be shared between companies**

The existent tools for the practice of enterprise information are quite time-consuming in the context of an organization which shares information and vice versa on a daily basis. In such a scenario the *researcher suggests that a tool could be made for the same, the foundation of the same being take from models like; “ebXML”* (tutorialspoint, 2021), *“RosettaNet”* (EDL basics, 2021) and *“OAGI”* (Oagi, 2021). *This would ensure that the proposed tool facilitates the possibility of sharing in an easy yet remote manner between diverse organisations.*

❖ An Indian EMI Giant

We are sometime down the future going to see an Indian E-Commerce giant, which would provide the service of EIM. Globally there are already some prestigious organizations which takeover a company’s EIM responsibility, however the same has not been practiced in India. Hence, *the researcher suggests that formulating a giant organization, with the objective of managing the EIM of various enterprises at a time. This giant could either be a government operation or a private one.*

In conclusion, the above suggestions may help rectify some of the loopholes / issues present in the practice of Enterprise Information, which shall further assist all the parties involved in the concept with ease in management of such information.

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