

# One ERP system for twenty five universities An empirical investigation for development ERP private cloud: Kingdom of Saudi Arabia universities case

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**ABSTRACT:** The governments spend a lot of money on Educational Enterprise recourse Planning (EERP) systems development to manage their universities business processes more readably. It may exceed the cost for one system to any university about 20 million dollars, (9) these systems are one of the university's competitive advantages that governments must make available. In this study; researcher tries to explain how governments can provide enterprise systems services in all their universities in a manner of less cost and more secure through using the ERP private Cloud.

**KEYWORDS:** Educational Enterprise recourse Planning (EERP), Private cloud, public cloud, university processes.

## 1. INTRODUCTION

Providing EERP system became an obligatory in universities, and it became a part of universities' capital that identifies its competitive ability.(2) The public universities consider one of the non-profit organizations that depend on their financial resources on government.

Governments try to be their universities more developing and competition through providing EERP systems, but developing as these systems need to provide quite budget depend on a number of universities and type of systems.

When the numbers of universities are increasing, this is becoming a load on government to provide EERP system to optimize the universities business processes. The researcher deploy his study on universities in kingdom of Saudi Arabia to clear if the government can provide every single university by an EERP system service in manner of less cost and more controllable through studying three diminutions EERP, university business process and private cloud.

## 2. EDUCATIONAL ENTERPRISE RESOURCE PLANNING (EERP)

The managers of universities try to think how to integrate the processes, individuals and technology to achieve university goals and increasing its competition ability. (6)

Universities are one of enterprises that have a high data flow between its processes and stakeholders from students, teachers, suppliers, competitors and employees.(10) Data flow must have flexibility and security to be competitive advantages that attract stakeholders(14).

Universities, the new target for Enterprise Resource Planning (ERP) providers such as Google, SAP and Databiz to provide such systems in order to manage their activities in a manner that add value to information from operations and main processes.(16)

almost of universities depended on separated systems that serve every sections, but these systems didn't achieve to university's goals because this increased the complexity of operations,(19) so the universities became

identify a large part from the universities budget to develop EERP systems for achieving goals like offering university applications in Availability and Scalability manner, simplify and gain the operations values, decrease the cost of separated systems and paper works.(18)

All those systems must help in the providing integrated and related information through data flow from student related divisions, human resources, supplies, financial management, public relations, investors and others; this made higher education institutes to invest heavily in enterprise systems.(16)

On the other hand; the major Enterprise Resource Planning (ERP) systems providers took notice of the services provided by universities to manage their information flow, which led to raise the competition to provide higher education institutes systems to aid in information flow to reach competitive advantage (12). Many of these institutes have already applied these systems; but as many as 30% successfully employed them in an effective manner (2), and as a reflex to these results a new providers emerged to provide new services that called cloud systems.(10)

Though of all benefits and features to the enterprise systems but main disadvantage is high establish and operational cost,(10) as we mentioned that public universities are a non-profit organization and depend on government as a financial sponsor.

Saudi Arabia was chosen because it has 25 public universities that depend on government as a financial main sponsor, because the education is free in these universities.(5)

As we mentioned; developing EERP systems became obligatory, so Saudi government must provide financial resources to develop 25 ERP systems for its universities.

The researcher selects 3 from 25 Saudi universities have an experience in EERP systems:

1. King Abdul Aziz university, its system name's is ODES plus
2. King Saud university, , its system name's is MADAR
3. King Fahd university, , its system e moraslat

These systems serve administrative and academic sections in all of these universities and its branches. Researcher collects data about 3 previous universities EERP systems through interviewing three types of users in these universities, despite of the different systems name and design, but the result is 3 systems cover these following administrative sectors:

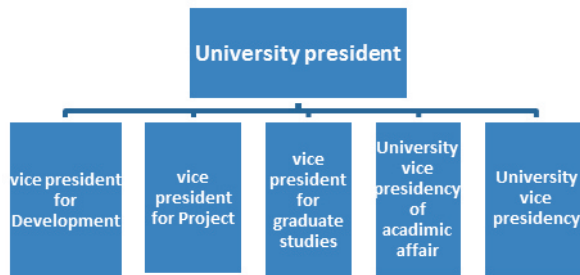
1. Human resource
2. Financial management
3. Procurement management
4. Warehouse management
5. Student registration management
6. Library management

### **3. UNIVERSITY BUSINESS PROCESSES**

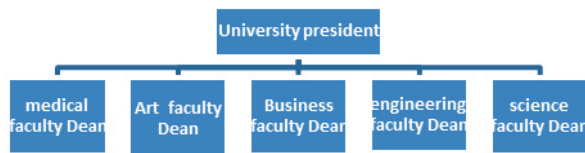
The researcher studied organizational structure in 3 universities to prove if the business processes in them are similar. All of them use the hierarchal structure; and depend on 3 types of structures which are:

1. Strategic management, it's a managerial side of the university consist of university president as a top manager to the university, and the vices of president as a middle management, every one of them are responsible on part of the university processes; for example, vice president for projects responsible of university projects management, maintenance department, and support services ... etc.

If we compare this type of structure in 3 universities, we find that the vices president is similar in names and responsibilities with a little difference in section names that falling under the vices like human resource and management of employee affair, and university vice presidency and vice presidency for administration affair.



2. Academic management, it has academic side of the university, it consists of the university president as a top manager to the university, and the Faculties Deans as middle management, every one of them are responsible on one of university faculties, number of deans depend on the variety of majors.



3. Faculty structure, it has two sides academic and managerial, in every faculty there a Dean in top management level, middle management for the managerial side consist faculty administration and vices Dean who act a vices president under the management of Dean, the other side is academic middle management which consist Heads of academic departments.



This analysis for the managerial relations in these universities structure is similar despite of some differences as we said. Through this analysis we suppose that the data flow architecture and business processes are similar in these universities, this is emphasizing that ERP architecture in one of these universities similar to another ERP architecture universities and can apply system in it.

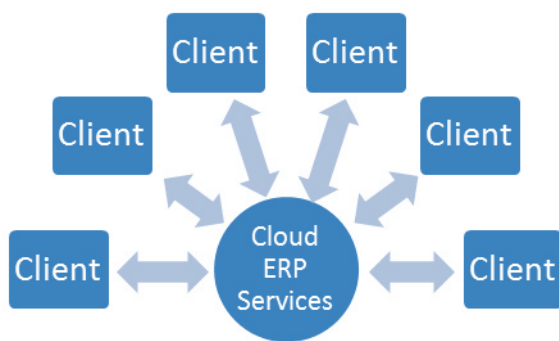
Ministry of Education in Saudi Arabia spends more than 3.1 billion SAR to develop plans to optimize education and training in this industry (4), 12 universities from 25 developed EERP system for itself in Saudi Arabia, every system aim to Provide general guidance and links for co-operation between different stakeholder groups involved in such efforts, including senior university management, project teams and system vendors.(2)

To achieve these aims, every university must provide financial resources, if the government wants to provide EERP systems to every university; this means the budget will exceed more than 500 million dollar.

#### 4. ERP PRIVATE CLOUD:

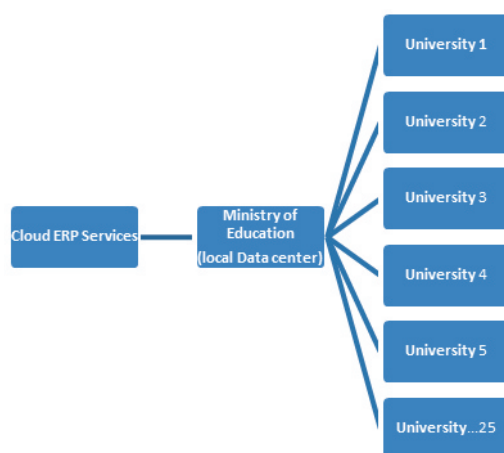
Now almost ERP system providers are providing enterprise systems for their customers depending on Cloud systems, this encourages a lot of enterprises to use these systems services specially the SME.(7)

They are providing cloud ERP services in two ways public and private (13); Public cloud which is depend on the base that client benefit from all system requirements through the service provider like infrastructure and servers...etc, the client can use the services 24/7 anywhere has internet, many public organizations reject to use these type of public cloud system because they are afraid on their Data privacy and security.(3)



The other way is Private cloud which the clients have cloud ERP services from the provider but through their infrastructure and servers, it's using same tools of public cloud but on local data center (6). Choosing one of these ways depend on resource availability for the client, the sensitivity of his data, the readability and ability to develop a local data center, and it need a group of enterprise who are similar in organization structure, data flow, business processes structure, and industry(11).

The ministry of education in Saudi Arabia can benefit from the ERP private cloud through cooperate with computer hardware professionals like HP, DELL and IBM or other to develop local data center, and deal with one of cloud ERP services like Oracle, SAP, and Microsoft or other to provide enterprise services to their public universities through the local data center.



Reliance on the previous analysis; using ERP private cloud in Saudi public universities through Ministry of education is workable because the universities are similar in organization structure, data flow, business processes structure, and industry.

There are some successful experiments in educational industry for that use the ERP private cloud like Kentucky Department of Education (KDE 2013), Podar Group of Schools (PGS 2013), and Australian National University (ANU 2014).(1) These experiments insure on the benefits that Saudi ministry of education will get if it moves from developing EERP system for every university to provide EERP services for them through private cloud such as More reliable service, cost saving, disaster recovering service , taking a lot of work of universities IT staff, data privacy and security.

## 5. CONCLUSION

This study proves that ERP private cloud can be useful for any group of organizations that have same organization structure, data flow, business processes structure, and industry. Saudi government should start to thinking in provide EERP services to their public universities through the ERP private cloud to reduce the cost, better control on universities operations, and effective processes management.

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