

Data Warehousing for improving efficiency of the institute: A study for Post graduate management institutes.

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Abstract

If the specific information has to reach to the person who requires it, then it has to reach in timely manner. The timely availability of the information will be possible only if the information is available in proper form. The information has to reach the different users of the system. Information is required at all sectors and all business forms across the globe. Education sector is also not left behind. Information distribution centers(Data Warehouse) are specialized databases committed to systematic preparing. They are utilized to help choice making activities in most current business settings normally when complex informational collections have to be contemplated and broke down.

The paper focuses on helping in understanding the role of data warehousing for improving the efficiency of the institution. Various sections of the post graduate educational institute were considered for understanding the importance of Data Warehouse. As the availability of the data in the data warehouse can be accessed and utilized by the users with the help of different tools. This will give various types of reports which can be used for decision making and in turn make the system efficient.

Introduction

Information warehousing is an accumulation of choice help innovations, meant for empowering the learning laborer (official, chief, expert) to settle on better and quicker choices. Information warehousing innovations have been effectively sent in numerous ventures: fabricating (for arranging shipment and client bolster), retail (for client profiling and stock administration), monetary administrations (for claims investigation, hazard examination, charge card investigation, and extortion recognition), transportation (for armada administration), media communications (for call investigation and misrepresentation identification), utilities (for control utilization examination), and human services (for results investigation). Since information distribution centers contain united information, maybe from a few operational databases, over conceivably drawn out stretches of time, they have a tendency to be requests of extent bigger than operational databases; venture information stockrooms are anticipated to be several gigabytes to terabytes in estimate. (Surajit C., Umeshwar D., 1997).

Information distribution center potential can be amplify if the suitable information has been gathered and put away in an information stockroom. An information distribution center is a

social database administration framework (RDBMS) outlined particularly to address the issues of exchange preparing framework. An information distribution center is an accumulation of corporate data, got specifically from operational framework and some outer information sources. (Rai Technology University)

Need of the Study Due to globalization the world has become closer, for competing in the race the institutions need to face so many challenges in terms of dealing with the day to day activities; the information or the decision to be taken should be available at finger tips. Technology helps in getting a faster access to the information. But managing the bulk amount of data generated at each and every end becomes a difficult task. Managing the data and making it available is a tough task, but technology and proper data management makes the things easier. Few decades back there was not much information required by the various governing bodies of education. More formalities were also not required at various levels. The availability of information technology and its frequent alternatives available created avenues of adopting the things and making the system more efficient so it can adapt to the changing scenarios.

Literature Review

WHAT IS A DATA WAREHOUSE?

An information distribution center is a social database that is intended for inquiry and examination as opposed to for exchange preparing. It for the most part contains verifiable information got from exchange information, yet can incorporate information from different sources. Information distribution centers isolate investigation workload from exchange workload and empower an association to unite information from a few sources. This aides in:

- Maintaining authentic records
- Breaking down the information to pick up a superior comprehension of the business and to enhance the business.(Paul Lane, Sep. 2007)

HOW DOES DATA WAREHOUSING WORKS?

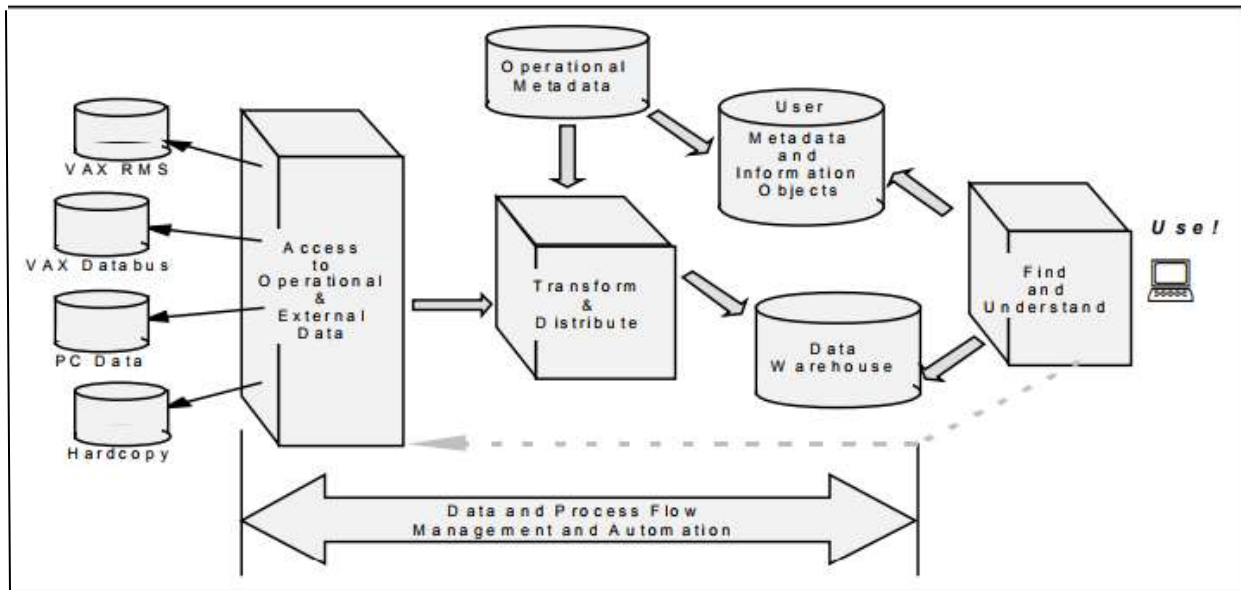


Figure 6.1 Working of Data Warehouse

The real plan process for building up an information distribution center keeps running from ideal to left in this outline.

1. Converse with the clients
2. Decide their necessities in wording that can be measured
3. Plan a database to help those necessities
4. Report the information depictions and different qualities (this will at last incorporate information sources, time stamps, information implications that change after some time, and so on)
5. Outline the rationale for interpreting information from different sources into a coordinated information store
6. Compose the code for extricating information from the different sources and changing it into the information stockroom, with updates to the metadata
7. And at last, bundle the techniques to deal with planning, administration and support.(Shruti Jadeja, July 2013)

Angela Bonifati et al. opines that information distribution centers are specialized databases committed to systematic preparing. They are utilized to help choice making activities in most current business settings normally when complex informational collections have to be contemplated and broke down. Regardless of the wide diffusion of information stockroom innovation and ideas, industry still don't have methods that assistance and guide the originator in recognizing and removing such information bazaars out of an undertaking wide data framework, covering the upstream, requirement driven stages of the outline procedure.

Literature Review Analysis and Findings

- 1) As the query methods and registry forms improve in the employment websites, the job of the Human Resource professionals during hiring process will include being able to set up the right criteria in the search engines to retrieve most appropriate resume data through the database. On-line hiring saves managerial time and gives an opportunity for large and small customers to find the most qualified fit for their employment needs. (Binshan Lin , Victoria S. Stasinskaya,2002)
- 2) Data collected will assist the Campus Center staff in determining where the leadership development program needs to be strengthened or changed. If most students do not show growth in certain areas, the staff will analyze what is currently being done and incorporate experiences /workshops to assist students in developing these skills with the help of transcript program. (white paper sponsored and facilitated League & Question mark,2004)

- 3) The Education Data Warehouse has improved Florida's ability to track and assess student progress and performance over time, from prekindergarten through graduate school. However, the warehouse has not fully implemented tools to improve stakeholders' access to data.(oppoga-office of program policy analysis & government accountability, report no. 9-31, 2009)
- 4) The system enables fast and easy-to-use, web based way of querying and analyzing data in order to facilitate operational work and provide support for decision making in Croatian higher education institutions. Proposed ETL process enhancements affect user experience in a positive way. Users are more informed and in a position to rectify erroneous data in collaboration with the help desk.(Igor Mekterovic, Ljiljana Brkic, Mirta Baranovic,2009)

RESEARCH METHODOLOGY: For the study descriptive research type was utilized.

Research Problem: What role Data Warehousing plays for improving efficiency at post graduate management institutes?

Research Objectives:

1. To understand the various factors/ areas important for institutes.
2. To know these areas will improve after using Data Warehouse.

Hypothesis of the research:

Utility and importance of Data warehousing is paramount in improving efficiency of the institute.

The statistical test Binomial test was used, the different variables Administrative systems data, Learning management systems data and content, Institutional web, E-mail, Research Data, Library, Training & placement, Alumni were measured using a 5 point scale(1= strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree)

Test proportion : Test proportion was taken as 0.5. Since more than 50% of favourable responses to a particular category suggest greater approval for this category.

Hence Test proportion = 0.5

H_0 : $P \leq 0.5$ (proportion of responses indicating "Utility and importance of Data warehousing is paramount in improving efficiency of the institute " is less than or equal to 50%)

H_1 : $P > 0.5$ (proportion of responses indicating "Utility and importance of Data warehousing is paramount in improving efficiency of the institute " is more than 50%)

Level of significance : $\alpha = 0.05$

Table 4.120 Hypothesis IV

Variable		Category	N	Observed Prop.	Test Prop.	P
Administrative systems data	Group 1	<=3	53	.11	.50	.000
	Group 2	>3	424	.89		
	Total		477	1.00		
Learning management systems data and content	Group 1	<=3	64	.14	.50	.000
	Group 2	>3	404	.86		
	Total		468	1.00		
Institutional web	Group 1	<=3	62	.14	.50	.000
	Group 2	>3	396	.86		
	Total		458	1.00		
Email	Group 1	<=3	63	.13	.50	.000
	Group 2	>3	412	.87		
	Total		475	1.00		
Research data	Group 1	<=3	59	.13	.50	.000
	Group 2	>3	407	.87		
	Total		466	1.00		
Library	Group 1	<=3	58	.12	.50	.000
	Group 2	>3	418	.88		
	Total		476	1.00		
Training and Placement	Group 1	<=3	40	.09	.50	.000
	Group 2	>3	420	.81		
	Total		460	1.00		
Alumni	Group 1	<=3	47	.10	.50	.000
	Group 2	>3	428	.90		
	Total		475	1.00		

Findings:

- a. Administrative systems data is important in administrative efficiency of the institute .
Observed proportion : 0.89, test proportion : 0.50, $P= 0.000$, so more than 50 % of the respondents say that Administrative systems data is important in administrative efficiency.
- b. Learning management systems data and content is important in administrative efficiency of the institute.
Observed proportion : 0.86, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Learning management systems data and content is important in administrative efficiency.
- c. Institutional web(domain.edu) is important in administrative efficiency of the institute.
Observed proportion : 0.86, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Institutional web(domain.edu) is important in administrative efficiency
- d. Email is important in administrative efficiency of the institute.
Observed proportion : 0.87, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Email is important in administrative efficiency
- e. Research data is important in administrative efficiency of the institute
Observed proportion : 0.87, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Research data is important in administrative efficiency.
- f. Library data is important in administrative efficiency of the institute
Observed proportion : 0.88, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Library data is important in administrative efficiency.
- g. Training & Placement data is important in administrative efficiency of the institute
Observed proportion : 0.91, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Training & Placement data is important in administrative efficiency.
- h. Alumni data is important in administrative efficiency of the institute
Observed proportion : 0.91, test proportion : 0.50, $P= 0.000$, Hence more than 50 % of the respondents say Alumni data is important in administrative efficiency.

From the above description it can be seen that all variables have observed proportion more than .5 & P value less than 0.05 hence the hypothesis “ Utility & importance of data warehousing is paramount in improving efficiency of institute” is proved.

CONCLUSION:

1. Data warehouse is piled up with tons of data of the system (i.e. Post graduate management data warehouse).
2. As the data is available in proper form so will be helpful in decision making.
3. Decision making is required at all the levels i.e. operational level, strategic level and tactical level to handle day-to-day activities.
4. Every user of different levels require reliable and specific information in different forms for better decision making.
5. Administrative people in particular require greater form so that they can do analysis and that to with time constraint.
6. So different forms of reports can be retrieved from Data Warehouse of Post graduate management institutes related to a particular task.
7. These reports will help in more efficient decision and in turn help to improve the efficiency of the post graduate institutes as they will get multi point access as a key factor besides timely, usability, subject –oriented, integrated and non-volatile information.