EKSAMEN

Emnekode:	IS-406
Emnenavn:	Enterprise Systems I
Dato:	14. mai 2008
Varighet:	09.00 – 12.00

Antall sider inkl. forside: 3

Tillatte hjelpemidler: Alle skrevne og trykte hjelpemidler er tillatt.

Merknader: Du kan besvare oppgaven på norsk eller engelsk.
Eksamen består av 3 spørsmål med ulik vekting.
Disponer tida riktig (anbefalt tid til hvert spørsmål er angitt). Du kan besvare spørsmålene i den rekkefølge du selv ønsker. Lykke til!

Spørsmål 1 (10 %) (ca. 18 min)

a. Hva er typiske forskjeller mellom Enterprise Systems (ES) og funksjonelle informasjonssystemer (IS)? (sistnevnte ofte omtalt som "legacy systems" eller "application silos").

b. Hvorfor ønsker ofte en organisasjon å erstatte funksjonelle IS med ett ES?

Spørsmål 2 (30 %) (ca. 54 min)

a. Vurder styrker og svakheter i alternative løsningstilnærminger som kan møte integrasjons/kommunikasjonsutfordringer mellom ulike IS innen en virksomhet basert på følgende perspektiver:

  1. EAI
  2. SOA
  3. best-of-breed

Spørsmål 3 (60 %) (ca. 108 min)

I kurset har vi hatt flere obligatoriske gjesteforelesninger hvor 2 forelesninger gitt av henholdsvis Teradata og Pragma fokuserte spesielt på datavarehus.

Casebeskrivelsen på neste side vedrører datavarehus og er hentet fra læreboka i kurset (s.115-116).

a. I lys av denne beskrivelsen, definer følgende kategorier av ES og forklar hvordan disse fordelaktig kan relateres til et datavarehus:

  1. CRM
  2. BI

b. Lag en enkel (generell) skisse basert på Sears' datavarehusløsning og forklar kort funksjonaliteten i de ulike delene (tips - Pragma-forelesningen).

c. Følgende ES (3 og 4) er ikke eksplisitt nevnt i casebeskrivelsen, men kan også relateres/kombineres i en datavarehusløsning. Gi noen eksempler på hvorfor bedrifter velger slike kombinasjonsløsninger hvor datavarehus er sentralt.

  3. ERP
  4. Enterprise portal

d. Basert på casebeskrivelsen og gjesteforelesningene fra Teradata og Pragma, kan du si noe om typiske utviklingstrender i datavarehusløsninger fra 1990-tallet og fram til i dag?

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The Problem

Sears, Roebuck and Company, the largest department store chain and the third-largest retailer in the United States, was caught by surprise in the 1980s as shoppers defected to specialty stores and discount mass merchandisers, causing the firm to lose market share rapidly. In an attempt to change the situation, Sears used several response strategies, ranging from introducing its own specialty stores (such as Sears Hardware) to restructuring its mail-based stores. Recently, Sears has moved to selling on the Web. It discontinued its over 100-year-old paper catalog. Accomplishing the transformation and restructuring required the retooling of its information systems.

Sears had 18 data centers, one in each of 10 geographical regions as well as one each for marketing, finance, and other departments. The first problem was created when the reorganization effort produced only seven geographical regions. Frequent mismatches between accounting and sales figures and information scattered among numerous databases forced users to query multiple systems, even when they needed an answer to a simple query. Furthermore, users found that data that were already summarized made it difficult to conduct analysis at the desired level of detail. Finally, errors were virtually inevitable when calculations were based on data from several sources.

The Solution

To solve these problems, Sears constructed a single sales information data warehouse. This replaced the 18 old databases which were packed with redundant, conflicting, and sometimes obsolete data. The new data warehouse is a simple repository of relevant decision-making data such as authoritative data for key performance indicators, sales inventories, and profit margins. Sears, known for embracing IT on a dramatic scale, completed the data warehouse and its IT reengineering efforts in under one year—a perfect IT turnaround story.

Using an NCR enterprise server, the initial 1.7 terabyte (1.7 trillion bytes) data warehouse is part of a project dubbed the Strategic Performance Reporting System (SPRS). By 2003, the data warehouse had grown to over 70 terabytes. SPRS includes comprehensive sales data; information on inventory in stores, in transit, and at distribution centers; and cost per item. This has enabled Sears to track sales by individual items (skus) in each of its 1,950 stores (including 810 mall-based stores) in the United States and 1,600 international stores and catalog outlets. Thus, daily margin by item per store can be easily computed, for example. Furthermore, Sears now fine-tunes its buying, merchandising, and marketing strategies with previously unattainable precision.

SPRS is open to all authorized employees, who now can view each day's sales from a multidimensional perspective (by region, district, store, product line, and individual item). Users can specify any starting and ending dates for special sales reports, and all data can be accessed via a highly user-friendly graphical interface. Sears managers can now monitor the precise impact of advertising, weather, and other factors on sales of specific items. This means that Sears merchandise buyers and other specialists can examine and adjust, if needed, inventory quantities, merchandising, and order placement, along with myriad other variables, almost immediately, so they can respond quickly to environmental changes. SPRS users can also group together widely divergent kinds of products, for example, tracking sales of items marked as "gifts under $25." Advertising staffers can follow so-called "great items," drawn from vastly different departments, that are splashed on the covers of promotional circulars. SPRS enables extensive data mining, but only on sku- and location-related analysis.

In 1998 Sears created a large customer database, dubbed LCI (Leveraging Customer Information), which contained customer-related sale information (which was not available on SPRS). The LCI enables hourly records of transactions, for example, guiding hourly promotion (such as 15% discounts for early-bird shoppers).

In the holiday season of 2001, Sears decided to replace its regular 10% discount promotion by offering deep discount during early shopping hours. This new promotion, which was based on SPRS, failed, and only when LCI was used was the problem corrected. This motivated Sears to combine LCI and SPRS in a single platform, which enables sophisticated analysis (in 2002).

By 2001, Sears also had the following Web initiatives: an e-commerce home improvement center, a B2B supply exchange for the retail industry, a toy catalog (wishbook .com), an e-procurement system, and much more. All of these Web-marketing initiatives feed data into the data warehouse, and their planning and control are based on accessing the data in the data warehouse.

The Results

The ability to monitor sales by item per store enables Sears to create a sharp local market focus. For example, Sears keeps different shades of paint colors in different cities to meet local demands. Therefore, sales and market share have improved. Also, Web-based data monitoring of sales at LCI helps Sears to plan marketing and Web advertising.

At its inception, the data warehouse had been used daily by over 3,000 buyers, replenishers, marketers, strategic planners, logistics and finance analysts, and store managers. By 2004, there were over 6,000 users, since users found the system very beneficial. Response time to queries has dropped from days to minutes for typical requests. Overall, the strategic impact of the SPRS-LCI data warehouse is that it offers Sears employees a tool for making better decisions, and Sears retailing profits have climbed more than 20 percent annually since SPRS was implemented.

Sources: Compiled from Amato-McCoy (2002), Beitler and Leary (1997), and press releases of Sears (2001–2004).