

a. Kaiser Permanente: Integrating Legacy Systems (Robertson, 1997)

Kaiser Permanente, a health care service provider, used three related technologies (dynamic OOP, domain-specific embedded languages, and reflection) in one project integrating their legacy systems. Typically, a legacy system is an in-place structure that is neither optimal for modern needs nor modifiable for project purposes (Robertson, 1997). The data often does not reside in a single database or in a single format. More often, it is distributed across a number of different vendor databases, running on different platforms, with significant physical distances between the separate services. It is often needed to use a variety of data sources for report generation, management information system construction, or the creation of client-server or Intranet-based applications. The Kaiser Permanente legacy systems contain data such as membership, subscription information, pharmacy, drugs, appointments and encounters, and billing. The data come from a variety of sources including online connections to pharmacies, and data input forms completed in doctors' offices by doctors and patients. The accuracy of the data is critical for accurate billing, accurate payments to service providers including consultants, physicians, and pharmacies, and the establishment of appropriate member status for a patient.

There are many areas in which legacy data can be put to use, such as marketing, executive, government reporting, competitive analysis, and new access to data. Legacy data contains a wealth of information that can be used in promoting a company's products, in running a business efficiently, and in providing competitive services. There are many opportunities for using legacy data, but the pressure to take advantage of legacy data is extremely high (Robertson, 1997).

b. Devlin Electronics: Tracking Production Schedules (Goodhue et al., 1992)

Goodhue et al. (1992) analyze the case in Devlin Electronics: when on-time deliveries in Devlin Electronics fell to only 70 percent, a multi-disciplinary team used organization-wide integrated scheduling data to track how production schedules were developed, changed, and adjusted by the different groups involved. They found a number of interrelated problems such as not properly updating inventory levels and equipment conditions at some plants, schedule overridden by marketing, neglecting plant capabilities and critical order requirements, etc.. By using organization-wide integrated scheduling data, Devlin Electronics understood its problems and then took corrective action. As a result, on-time delivery increased from 70 percent to 98 percent.

c. Southern Cross: Cross-product Line Analysis (Goodhue et al., 1992)

When the executive vice president (EVP) of Southern Cross, Inc. needed to find out why sales were up by only one-half percent in spite of many new accounts, and demanded an analysis across all regions, customers, and products to determine the cause, nothing in the standard reports provided any indication of the problem. Because the information was contained on several different (unintegrated) systems, and the products had been grouped into various categories, there was no way to conduct an automated analysis. After 40 person-hours of effort of using spread-sheet programs and manually backing out products that had switched categories and adjusting inconsistencies between the different systems, the top-level analysts assembled a compatible base of information to answer the EVP's questions. Their analysis indicated that the sales slump was occurring primarily in the old, established, long-time distributorships (an insight that was not apparent from analysis of the non-integrated data). With the problem pinpointed, managers could take appropriate further action (Goodhue, et al., 1992).

d. Greenfields Products: Creating A Single Customer Interface (Goodhue et al., 1992)

Goodhue et al (1992, p301) analyzed the case of Greenfields Products:

"Each of Greenfields Products' five divisions has its own salespersons and distributes its own product lines in separate trucks. Top management wanted the ability to coordinate the sale and delivery in the five divisions, that is, to present a single face to the customer by having only one salesperson (not five) call on each customer and only one truck (not five) back up to the customer's delivery dock. They realized that without an integrated, consistent base of customer and order data, coordinating the actions of the five divisions to create a single customer interface would be impossible."

e. Burton Trucking Company: Better Dispatching and Shipment Tracking

(Goodhue et al., 1992)

Burton Trucking Company uses its information systems based on a single integrated data model for the entire company, where the integrated data was derived from each sub-unit. This integrated system allows them to link across both geography and functions. By using integrated, sharable data, they expanded their dispatch systems (the responsibility of operations) with little effort to have a much better shipment tracking system (the responsibility of marketing). Data integration made them capitalize on previously unrecognized interdependencies between dispatching and shipment tracking.

Though the new dispatching system "contained integrated data about all customers, equipment, and shipments, salespeople at each local terminal argued that in order for the information to be valuable to them, they needed to add additional fields such as permissible delivery hours, after-hours phone numbers, and special instructions for drivers. But the salespeople could not agree on exactly which additional fields should be added. Terminals with close-in satellites (trucks every 2-3 hours) had very different needs from those with distant satellites (trucks every 5 hours). It was decided that trying to standardize at this level did not make sense. They designed 10 extra fields that the local people could use as they saw fit and gave them search capabilities and screens to update and query whatever data they needed in those fields" (Goodhue, et al., 1992, p302).

Also at Burton Trucking Company, the operations group wanted to automate freight transfer recording using bar codes, but because the data administration group did not understand what they were trying to do so could not "square" it with their data model. After a delay of six months, the project could proceed and was quite successful (Goodhue, et al., 1992). This case indicates that the requests for change in the use of integrated data may involve certain bureaucratic delays.