BANK OVERHAULS ITS STRATEGIC INFORMATION SYSTEMS PLAN IN 3 WEEKS

Using powerful modeling tools and a refined technique, Kwangju Bank accomplished in a month a task that usually takes at least 6 months: building a top-down strategic information plan that aligns all systems with business goals.

December 19, 1997 -- South Korea: In 1992, Kwangju Bank, a progressive regional bank in southwest Korea, had a unique challenge. The bank faced the situation that it must replace its mainframe systems with new systems, because the previous systems were unable to meet the increasing needs of customers for flexible and speedy services. Therefore, in the belief that up-to-date information systems are vital to differential competitive advantages in an ever-changing banking environment, the bank decided to build new systems based on client/server technologies. These are fully downsized systems applied to all operational transactions of the bank, with distributed processing capabilities. The new systems officially went into operation on January 3, 1994.

"The year 1995 was also the year of information technology for the Bank. The world's leading computer magazine, ComputerWorld, selected the Bank as one of the 100 best users of information technology," said Mr Young Soo Park, Chairman and President of Kwangju Bank. *"We exported the computer downsizing system to Malaysia, writing a new chapter in the financial history of Korea. Through our own on-line network system, KINS, we started to offer home and firm banking services."*

Mr Young Soo Park, Chairman and President - Kwangju Bank

Mr Phillip Yoon, a senior manager of the Bank's Kwangju Economics and Management Institute (KEMI), which is responsible for systems research and development and was involved in implementing the client/server systems, said: *"The systems have brought a lot of advantage to the bank. They reduced down-time to an extremely low level, as all of the servers function independently while also sharing data. These systems have enabled the bank to reduce employees, workload and processing time. They have contributed to the development of new*

products and have allowed the bank to greatly reduce investments in computers, avoiding over-dependence on any one vendor."

Mr Park further added: *"In addition to a CD ROM-based visual information system, an electronic approval system has been instituted and asset & liability management fully computerized. Such integrated computer systems enable sounder analysis of various investment risks and the development of safer income sources."*

Mr Phillip Yoon - Kwangju Bank, KEMI

However the bank could not rest on its laurels. As Mr Yoon said: *"It needed to use these systems effectively to produce strategic and analytical information, so providing officers with analytical power needed to satisfy the business requirements of the end-users of the bank and provide customers with satisfactory differential services."*

Although it had converted all on-line systems to client/server, finding a solution for its strategic goals was a different matter from merely building a physical infrastructure with good architecture. In other words, by 1997 the bank found that the same systems that had offered it competitive advantage from 1994 were now in danger of becoming "legacy".

It realized that it needed to evolve the systems using a new integrated strategic data model that reflected its business strategies and requirements for the next millennium. The bank foresaw market opportunities that those systems could not support. The emergence of global banking and new applicable technologies such as the Internet and electronic commerce required highly integrated strategic information systems. Kwangju Bank decided to build a platform-independent enterprise information architecture that would give it cross-functional, non-redundant systems and databases that could meet its needs well into the future.

The Bank investigated ways of defining an enterprise architecture, which it had been told would take at least 6 months. However, one vendor offered a technique to develop a Strategic Information Systems Plan (SISP) with full documentation in less than a month. Although the bank was initially skeptical that the shorter timeframe could be met, it agreed to try the technique as it believed in the importance of establishing a strategic “blueprint” for all systems development that would conform to business goals now and in the future.

From August 25 to September 11, 1997 Kwangju Bank worked with Visible Systems Corporation to develop the SISP with full documentation. The Chief Scientist of Visible - Clive Finkelstein (who is also Managing Director of Visible Systems Australia Pty Ltd and of Information Engineering Services Pty Ltd – IES – in Australia), together with consultants from Visible's Korean distributor Micro Banking Systems (MBS) Corporation - helped the Bank to identify and prioritize tactical and operational systems and databases that would be required.

"As a result", said Clive Finkelstein, *"the Bank now has a strategic model and a clear plan for developing well-integrated systems in its most critical areas: namely financial management, customer management, and marketing."*

"Because the Bank took the time to define its critical business elements, such as "Customer" and "Market Need" and the business rules that apply, it has a rich set of reusable business objects."

As a result, production of new applications is much more efficient than with non-integrated systems. Also, changes to a business object in one system are changed automatically in other systems, so that management always has the most up-to-date information.

Mr Clive Finkelstein, Chief Scientist - Visible Systems Corporation

"Competitive businesses no longer have the luxury of failure in building information systems," continued Mr Yoon. *"In developing systems, we must operate like civil engineers: they don't put up three bridges until they finally have one that will stay. They know how to do it right the first time. In IS, we seem to believe that if you don't get it right, you still have time to learn from that and make it better next time. That may have worked years ago, but today version 1 has to have the functionality and capability that we often didn't deliver until version 5 or 6."*

Defining a Strategic Information Systems Plan. Kwangju Bank, like many other traditional companies, had developed its original client/server information systems from the bottom up, building separate, non-integrated systems. As a result, it had redundant data in legacy systems, and there were many processes involved in keeping the different versions up to date. Each version of, say, "Customer" required substantial work when a new customer was added or existing customer information was updated. This meant that the bank had people doing non-productive work simply to keep all the different versions of the same data in synchronization.

The SISP eliminated that redundancy. It provided a map to identify common reusable business processes and associated data that are shared throughout the

enterprise. A SISP is a strategic model that provides a firm foundation for developing plans for databases and systems. Management set the overall mission, goals, and objectives, and from that -- the strategy for achieving those goals and the key performance measurements to gauge the achievements. From there, management can determine the most effective tactics to accomplish its objectives. Then, those tactics are broken down into well-defined steps, which are business activities and processes. The data associated with those steps is defined. From this foundation, individual databases and systems can be built step by step.

The process of developing a SISP is similar to building a 100-story building. There is a better chance of the finished building being exactly what the owner intended if he works with an architect. The architect develops a conceptual design diagram and a model then develops the floor plans. This is illustrated by the model at right of the new Kwangju Bank building, with its distinctive rooftop helipad.

Model of new Kwangju Bank Building

It is easier to work with an architect making changes on paper than to build the first floor then rip it out if it is not suitable. The builder then starts with a firm foundation and very clear plans and progressively builds and completes the parts of building that are needed first. Similarly, the Strategic Information Systems Plan defines those elements that are fundamental to an enterprise; which must be put in place first and that will be shared throughout the organization.

Kwangju Bank's management had committed to full participation in developing an SISP. The bank began in a facilitated session with senior managers and other bank experts over two days. From these important meetings, a strategic model was developed using the Visible Advantage Enterprise Engineering tool, to analyze data models and identify cross-functional processes that indicate business-reengineering opportunities.

The Final Kwangju Bank Building, with its distinctive rooftop helipad

The Kwangju Bank model enabled the finished building to be built so that it met the Bank's requirements exactly, as shown at left. So also the strategic model identified opportunities for reengineering that the Bank may not otherwise have considered with the typical independent processes that evolve in most organizations.

By focusing on strategic business plans and developing strategic models from those plans, Kwangju Bank identified common, reusable business processes. From these processes they can progressively build business objects that are truly reusable – not just in terms of how they were written as code and data, but in the way they relate to the entire enterprise.

Now, there will be only one place to make a change relating to data and processes for a “Customer”. If the bank needs to add to or augment details about the way it deals with customers, it can make one change in the Customer business object and every part of the organization’s systems will be instantly updated. This method is more productive than having to change many different legacy systems, each of which deals with different parts of “Customer”.

Head Office Branch - Kwangju Bank

In the past these changes may have typically required two to three years of upgrades to legacy systems. *“Kwangju Bank could not afford to take 2- to 3-years for upgrade projects if we wanted to stay competitive,”* commented Mr Yoon. *“We knew we had to be more responsive than that to market changes.”*

Powerful Modeling Tool. Visible Advantage was a cornerstone in developing Kwangju Bank’s SISP. It provided a diagram of entities and business rules defined in the strategic management meetings, so bank officials could review important business concepts and relationships.

From the strategic model, Visible Advantage automatically derived sub-projects as well as the project plans for implementing those sub-projects. A strategic model will typically identify from 70 to 80 sub-projects. Each of these may be a project that could take a year or two to build, but with the advantage that early priority systems can now be delivered in months. Visible Advantage helped the bank to identify which priority systems should be implemented first. Importantly, Visible Advantage identifies prerequisite data and common processes that are shared throughout the enterprise. The enterprise then builds these once only as business objects that are easily reused and shared. A further advantage is that if a business object is changed, that change is reflected immediately in every part of the organization that refers to the changed business object.

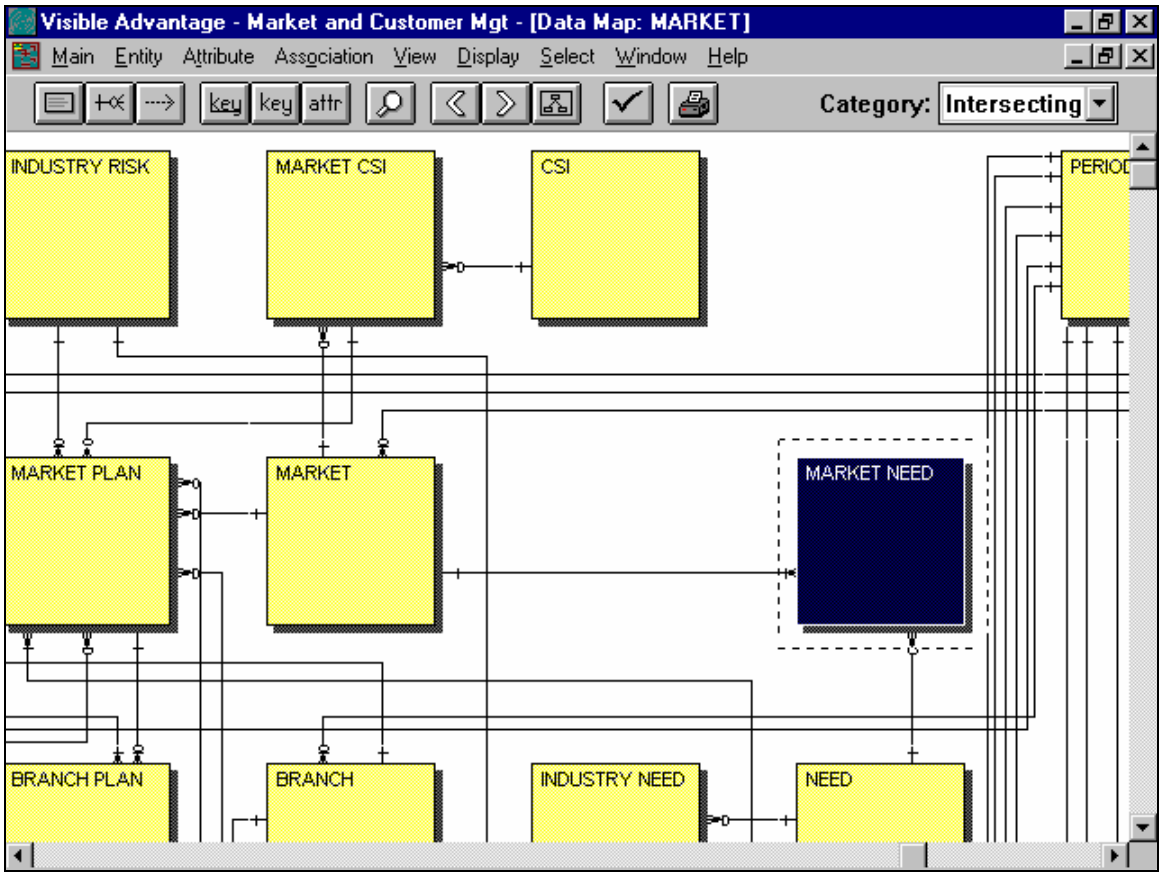
Many tools in the market enable analysts to develop diagrams and report on those, so allowing users to look at business requirements incorporated in those diagrams and their associated documentation. However, cross-functional processes that offer reengineering opportunities may not be apparent from visual inspections of diagrams and business rules. For example, some of these reengineered processes may enable business processes -- previously carried out one after the other in a serial fashion -- instead to run in parallel. This can significantly change the responsiveness of an enterprise. Many CASE tools cannot handle multiple parallel processes, yet most enterprises can benefit greatly from implementing parallel business processes. Tools that examine the requirements in just one part of a business do not provide the enterprise perspective that is needed today.

Visible Advantage uses Entity Dependency, a technique developed by Clive Finkelstein and unique to Visible. This enables Visible Advantage to identify cross-functional business objects automatically. Using Entity Dependency, it analyzes the strength of business rules (represented by associations between entities). It then identifies common reusable processes, the data required by each particular process, and prerequisite as well as interdependent processes that are also required by that process based on the business rules. It then derives the project plans that enable priority systems to be delivered early.

Other CASE tools use techniques such as affinity analysis, which is subjective and can yield different answers from different people. Because it is less precise than Entity Dependency, the systems defined by it may take longer to build, cost more, and may define less than what is absolutely required by the business in that area. The result can be dysfunctional systems; and worse, this fact may not be discovered until project cut-over. On the other hand, the cluster analysis that is carried out by Visible Advantage based on Entity Dependency is a completely objective technique that allows priority systems to be easily identified so that they can be built rapidly and delivered early.

Mr. Yoon added: *"Because Visible Advantage enables us to build integrated object-oriented systems that implement management's business rules as expressed in strategic, tactical, and operational business plans, Kwangju Bank can now precisely align its systems with those plans."*

For example, management indicated that a market must have at least one need that the bank is in business to satisfy. The bank's data model therefore shows precisely that the market and market need have a relationship of *mandatory one to mandatory many* as shown in the data map below. *"Mandatory many"* indicates that whenever there is a reference to "Market" anywhere in the organization, relevant banking staff must be aware of the "Market Needs" associated with that market. Therefore, when the bank looks at a new product, this model ensures that the needs of each market are examined or surveyed: to assess whether the needs addressed by that product support the needs of those markets.



Part of the Strategic Model for MARKET, showing "Market Need" data

Without this business rule, the bank may develop a product from a perception of needs as seen from within the organization; and yet the needs of the market may be quite different. Similarly, the bank realized that needs of emerging markets for global banking and electronic commerce might not be readily apparent to

insiders. The strategic model and the SISP force a market needs analysis, according to the business rules, for every new product considered.

For example, if a banking product assumes contact with customers by telephone or mail, a market assessment might reveal that customers do not want to be swamped with mail coming across their desks and instead prefer e-mail everyday for communication. Unless the bank's product takes that into account, the bank may lose competitive ground.

Additionally because Visible Advantage supports the use of fifth business normal form for knowledge management, it can easily draw on the knowledge of banking experts to determine relationships among relevant bank data. For example, the relationships that exist between different customers of the bank are a very important aspect of customer management. Because of their complexity, many other tools require data administrators, not business experts, to determine these relationships manually; the result is that much important business knowledge may therefore be overlooked.

Future Benefits. An additional important benefit of the SISP to Kwangju Bank was the foundation for a data warehouse. The strategic model developed as part of the SISP addresses one of the problems of data warehousing: identification, extraction and transformation of relevant data from operational databases into a data warehouse. It also simplifies the bank's migration of legacy databases to a new platform and new environment. By building new forward-engineered systems to replace those legacy systems, the bank can take advantage of most appropriate technologies for operational systems, as well as technologies for data warehouse. It can now deploy these systems in a new client/server environment for proactive competitive advantage using internet, intranet and electronic commerce technologies. Because the bank now knows in detail its system requirements -- clearly determined by the business requirements -- it can build first those priority systems that are of highest priority. It can progressively change its banking business to be more competitive without having to throw out all its legacy systems and start again. In the future the SISP will allow the bank to selectively and easily upgrade its integrated systems to whatever technology is most beneficial, without having to rework the business or rebuild all its systems from scratch.

Foundation for Enterprise Architecture

The concepts used for developing the Bank's SISP were based on Enterprise Architecture principles. The SISP therefore provided a firm foundation for its extension later into a complete Enterprise Architecture for the Bank. Further details on Enterprise Architecture are available from the IES web site Projects section.

More Information

The Strategic Information Systems Plan developed in this three-week period was written in English and translated to Korean. Information on Visible Advantage, the modelling tool that enabled Kwangju Bank to develop their SISP in three weeks, is available from the Visible Systems Corporation web site at www.visible.com/.

English:

Go to http://www.ies.aust.com/. Click on the *Projects* or *Papers* links to go immediately to the relevant section for the Kwangju Bank project.

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