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WHY?
- Indigenous mortality
- Kids in detention
- Treaties ignored

WHY NOT?
- A charter for human rights

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TRACING THE FAMILY SUPERTREE AND WHY POWERPOINT FAILS

By Hye-young Helen Paik

At your service – applications on demand

The second wave of the internet revolution will change the way businesses offer their products and services. What will this mean?

A while ago, I visited a travel agent's office to confirm a few details about my trip and make the final payment. The office had two long desks along the side walls, on which streams of computers were sitting. It must have been a busy time of the year; the queue was long. I finally got to talk to one of the travel consultants. I told him what I was after and he asked, "Ah … did you make a booking with the person sitting over there? "Yes," I replied. "Oh … Sorry, the system on this side is not connected with the computers on the other side. You will have to talk to a person from the desk over there." So, I joined the queue again thinking how stupid the situation was and how I wasn't going back for their service again.

Many successful businesses outgrow their original capacity and assume new roles. Often, they employ new IT systems to perform these new roles, which means some parts of the company's business functions are fulfilled by old systems that are not compatible with the new. Over time, IT systems develop a life of their own and the whole IT infrastructure becomes unnecessarily complex.

The problem is not that the companies do not have enough data about you. The problem is that the data is scattered among different systems (e.g. billing, customer relations, marketing) in the organisation, managed by different departments whose offices are placed in multiple geographical locations. It is just too hard for them to get a single normalised view about you.

Integrating applications and their data to make them act like a single entity is a difficult, time-consuming and costly task. However, business needs and steep competition in the marketplace have been driving companies to look for solutions. Many software vendors with huge stock prices make their profit by selling various programming platforms and their proprietary knowledge that are designed for the task. However, packaged solutions are costly and cannot keep pace with constantly changing trends in business.

This is set to change thanks to recent developments in the Web. Commentators call it the second wave of the internet revolution that will change the way businesses offer their products and services to their customers and revolutionise the ways they work with their partners.

At the heart of this development are Web services. A Web service is a software component that can be invoked and return its results over the Web. An important characteristic of a Web service is that it makes information about itself available so that others can find it and understand how to use it. What's more, an existing application can be Web serviced-enabled, allowing them to be readily accessible to other applications. An implication of this is that individual Web services become software building blocks that can be put together as needed.

In the business domain, you can quickly build new services to meet customer demands based on services provided by others. Web services make it much easier than in the past to share data between applications. Customer data that is stored in multiple sites, can now be "virtually" integrated, so that, for example, you develop a consolidated customer profile for precisely targeted marketing. Or, as another example, the disparate information systems in a large organisation such as UNSW could be combined into a coherent information resource that could provide novel services to staff, existing students and potential students.

For example, the UNSW student system and the course/student management systems in individual schools could be integrated, allowing students to create a personal service that will automatically track their graduate status, or perhaps recommend their course program for the next semester depending on their progress.

Already Web services are levelling the playing field between the small businesses and big businesses. For example, Amazon.com opened up its core business functionality as a collection of Web services: searching for goods, ordering goods and paying for goods. This allowed hundreds of small retail businesses to hook their own catalogues into Amazon.com's and sell their products worldwide.

Web service technology makes information sharing between applications much easier and shortens the development time for new applications. It is not far-fetched to say that in the near future, the concept of large, monolithic software applications will be obsolete. Virtually anybody will be able to build their own application for the needs of the moment.

Proliferation of Web services does, however, pose issues in data security. For example, consider a loan approval service that takes your information and does credit checks by passing your information to a credit checking service. This kind of scenario is inherent in a Web services world where one service relies on a service provided by third party in order to achieve its goals.

Another challenge in Web services is the construction of single applications that involves large numbers of interacting component services. Orchestrating such a collection of services requires issues such as protocol management, distributed transactions, quality of service, etc. to be resolved. Researchers in the School of Computer Science and Engineering (in conjunction with researchers in the Smart Services CRC) are at the forefront in addressing these issues. ■