

Doing Business – Re-imagining the way we provide service

S. Apeldoorn
Director, ProjectMax Ltd

Abstract

The customer service interface within Councils, and between their service providers and the community in today's age of disruption and change, is out of step with technology and the desire for excellent service and timely reliable information.

By in large, the industry relies on interfaces between people and task focused business applications for their delivery of services. This presents significant challenges:

- Disruption and delays when *people* cannot be contacted or do not have the information available at the time it is required,
- Finding, retaining and training expensive *people* resources tied up with repetitive, rote and disruptive work rather than tasks more better suited for their skills,
- Storing and retrieving significant quantities of data,
- Increasing complexity and number of interfaces as business requirements change over time.

The challenge is to re-imagine how the organization interacts to simplify and improve the delivery of our services and the availability of accurate, reliable and timely information as and when it may be required.

This paper discusses customer interface systems and an approach to a re-engineering process that could be implemented as part of an effective management strategy.

Key Words:

Customer service Interface, simplify, improve, effective management strategy.

1.0 Introduction

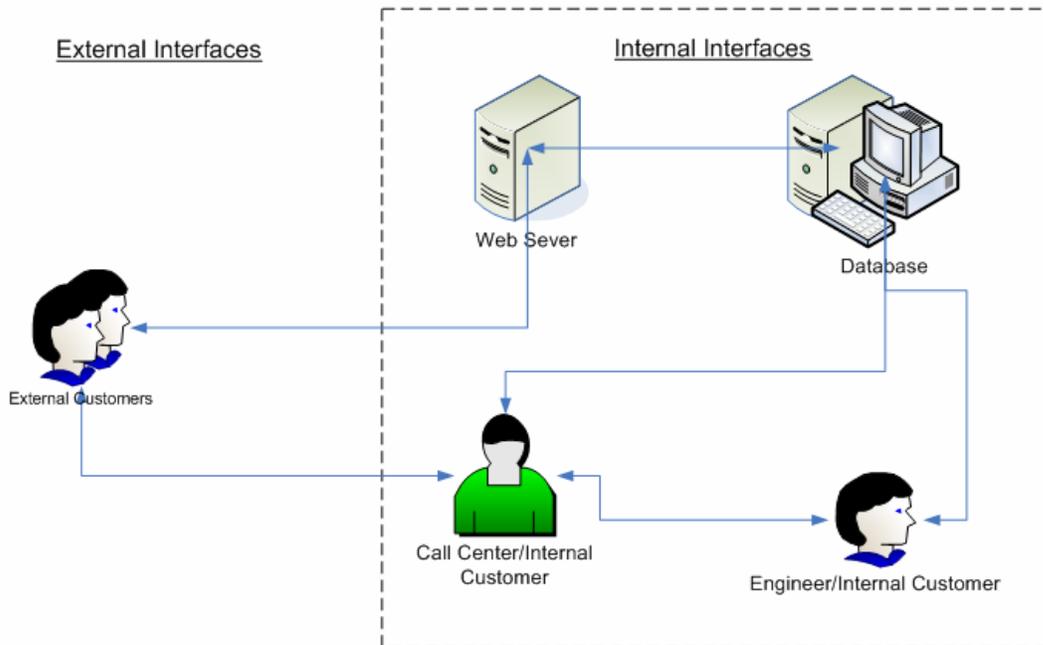
Organizations are valued more than ever on the quality of their interactions with their internal and external customers. As the value of the quality and cost of their interactions increases, an organization's strategy must inevitably focus on their customer interface systems. These interface systems exist to mediate interactions and relationships within the organization and the various external customers, to maximize the organization's efficiency and effectiveness.

The building blocks of customer interfaces are composed of:

- *People* within an organization,
- *Machines* (such as computers, servers, databases etc),
- And a combination, or *Hybrid* of the two, (people-led “machine” interfaces, e.g. Internet interactions; or machine-led “people” interfaces, e.g. database driven call center).

Interfaces are the interactions that occur between people, or people and machines. Nearly all organization’s today rely on a variety of human and machine interfaces to connect people and information.

Fig 1.1 – External & Internal Interfaces



The quality and effectiveness of the organizations external interactions is dependant on the efficiencies and effectiveness of its internal interfaces.

The number of interfaces within an organization is greater than the number with external customers, and it is the efficient and collective interaction internally that determines the effectiveness and quality of the external interfaces with customers.

Overtime, as customer demands and business processes change, there is typically an increase in the number of interfaces that are added to organizations, leading to a proliferation of interfaces creating a forever increasing internal complexity and lack of integration.

Fig 1.2 - Typical Example of complex Internal Interfaces

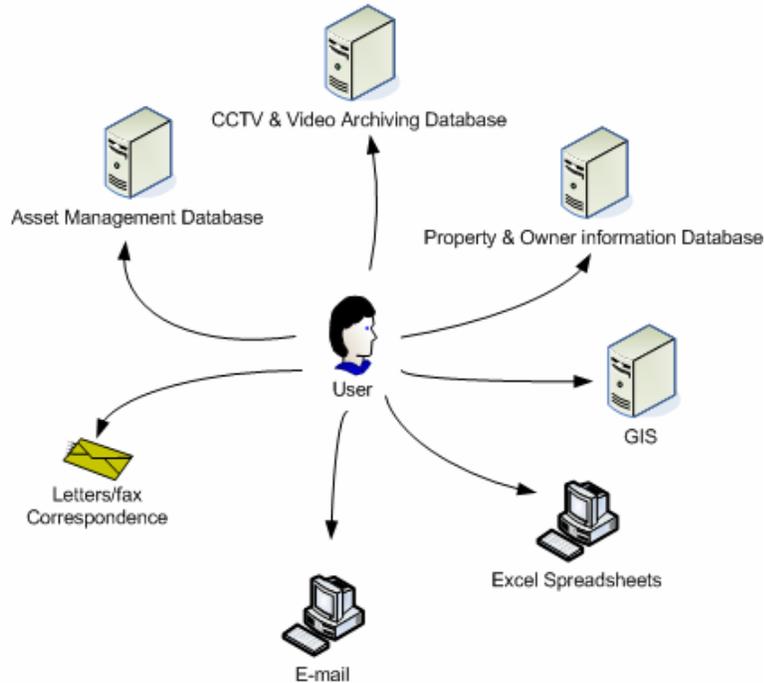
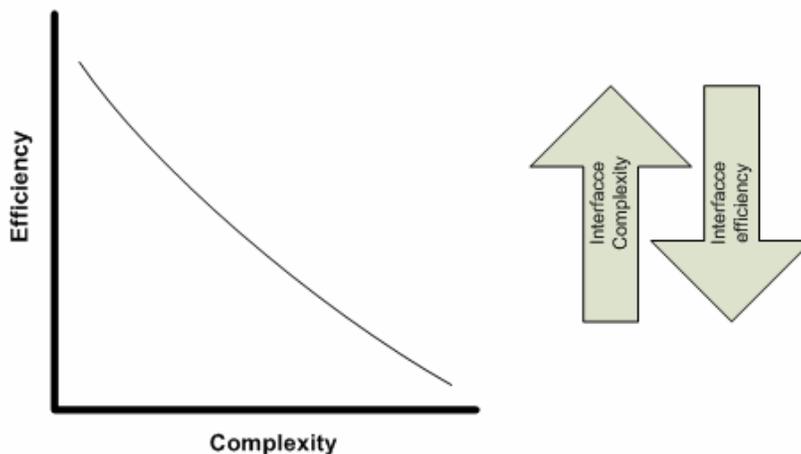


Figure 1.2 demonstrates an example of complex internal interfaces that could exist within a council water services department; Overtime business processes have been added to the department to manage the water assets, creating a number of different interactions that the user needs to undertake to carry out their work. As the department's requirements continue to change, more processes would be added driving further increased complexity.

Our study has shown, that as the number and complexity of interfaces increases, the efficiency and therefore the effectiveness of their overall interactions diminishes for the organization (refer to figure 1.3).

Fig 1.3 – Diminishing Efficiency with Increasing Complexity



The increasing complexity of the interfaces occurring within organization's today is supported by:

- The adoption/purchase of Business Process (Task-Centric) databases (machines) e.g. CCTV & Archiving Database, Asset Management Database & Property information Database
- The reliance on People-Dominant interfaces with these machines.

2.0 Complexity of Existing Interfaces

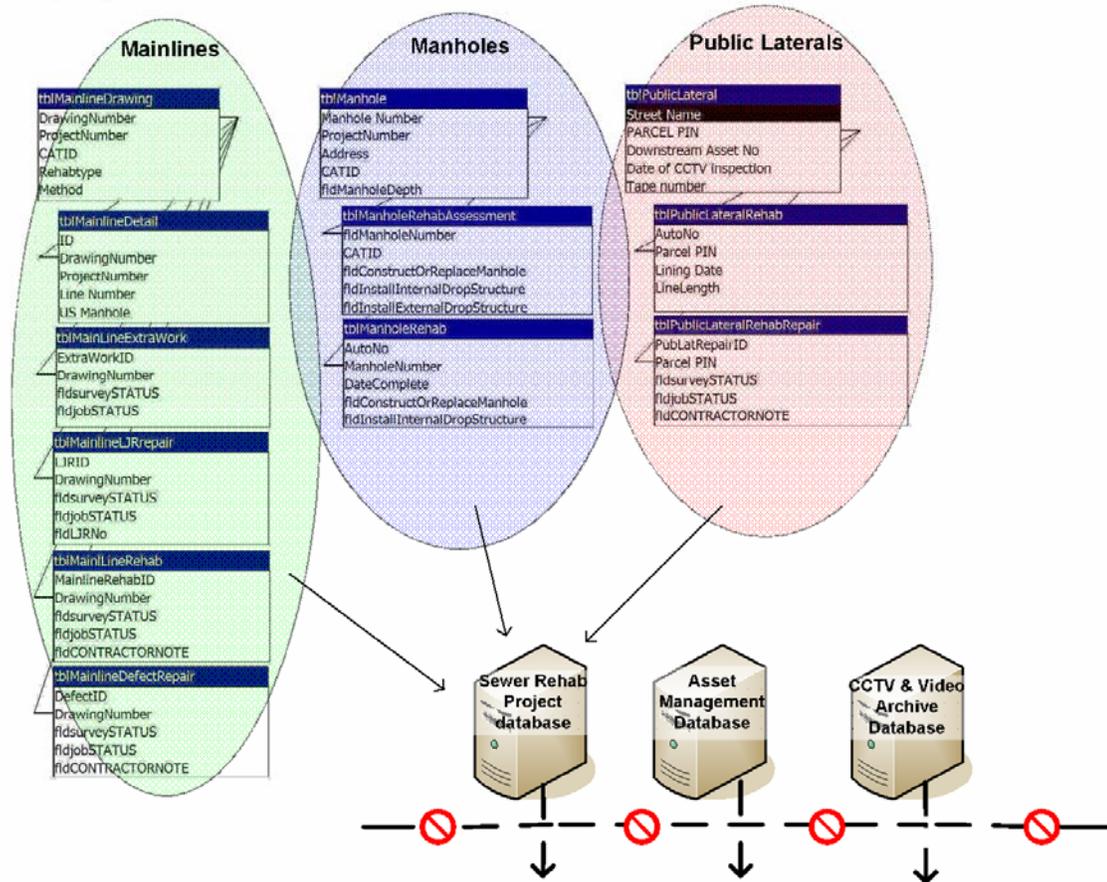
2.1 Task-Centric machines

In almost all cases machines are created for business processes, and so their structure or foundation is based on carrying out particular tasks. This structure in effect creates 'silos' of data that are "non-transversal". By this we mean that the information about an object, say a pipe asset, does not connect with any other type of asset within the same database, nor does it connect to the same pipe asset in any other database applications within the organization, regardless of any indirect or direct 'real world' relationship. To obtain all of the information relating to that pipe asset, a person must seek information from multiple sources individually, (as illustrated in Fig 1.2). The resulting complexity and inefficiency is compounded as more task-centric business processes are added.

As a typical example, Figure 2.1 shows the relationships between the tables in a Sewer Rehabilitation Project Database. The database collects information on the rehabilitation of three different asset types; Mainlines, Manholes and Public Laterals. The "relationship" connections, (as indicated by the lines joining the various tables) tie together only the tables containing information about the same type of asset, and because the database is designed for the 'tasks' associated with the rehabilitation of each asset type only, it is not possible for there to be relationship connectors between the different asset types. In effect, each type of asset exists within a 'bubble', and completely independent of each other. Similarly, no data relationships exist between any of the asset tables and the other databases within the organization, restricting the interaction between them, even though the same assets may exist in all of the database applications. As a result it is then necessary to either add more database applications or elaborate existing ones in response to changing requirements.

Fig 2.1 - Task-Centric Business Processes

Relationships for rehabDATA
 Tuesday, 23 May 2006



2.2 Reliance on People-Dominant Interfaces

Although business processes are often reviewed or re-engineered, the mode of interactions between them are often overlooked. The role of people within organization's is often regarded as the best interface between the business processes. However, reviewing the role of people as the principal drivers of interfaces has identified that in some cases people are in fact undesirable in this role, and actually contribute to the complexity and lack of integration within the organization, and ultimately impacting on the service provided to internal and external customers.

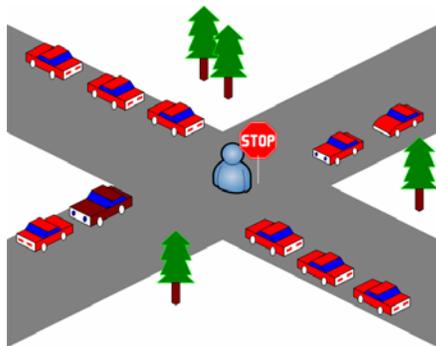
Table 2.2 lists and compares the roles at which people and machines are most proficient.

Table 2.1 – Comparison of roles between people and machines

People		Machine	
Best at...	Poor at...	Best at...	Poor at...
Conveying Empathy	Dealing with large amounts of information	Processing large amounts of information	Conveying Empathy
Handling exceptions	Repetitive & rote work	Repetitive & rote work	Handling exceptions
Personalizing	Sorting & linking complex data	Sorting & linking complex data	Social Skills
Providing solutions to problems	Always being available	Always being "ON"	Providing solutions to problems
	Accuracy	Speed & Accuracy	

The central role that people often undertake when working within complex internal interfaces, (refer back to Fig 1.2) calls upon the skills that people are in fact the most poor at delivering, while reducing the time available to carry-out the other customer interface roles they are best at providing. Machines in contrast excel at controlling complex data.

An analogy that best provides a simple example of a people versus machine-dominant interface is a controlled traffic intersection. We have all experienced the congestion and frustration of a traffic intersection, where the signal lights are out of operation and the traffic is being controlled by a point's man. Traffic signals consistently provide a more efficient and controlled interface for the direction of traffic than the point's man – hands down. *(The point's man skills would be best in his other role as police officer dealing directly with an offender breaking the law).*



If the aim is to improve the efficiency and effectiveness of an organization's interactions, then there are several critical questions that management of the organization need to ask:

- Are all of the machines in the organization performing one or more business processes?

- As business requirements change, are the existing machines capable of adapting to those requirements without elaborate changes, or would additional machines be required?
- Does each service interface perform its functions optimally, or could the organization do better in some cases by deploying machines in place of people?
- How easy is it to find, retain and train people tied up with repetitive, rote and disruptive work, and how much does it cost?

3.0 Removing the Internal Interface Complexity

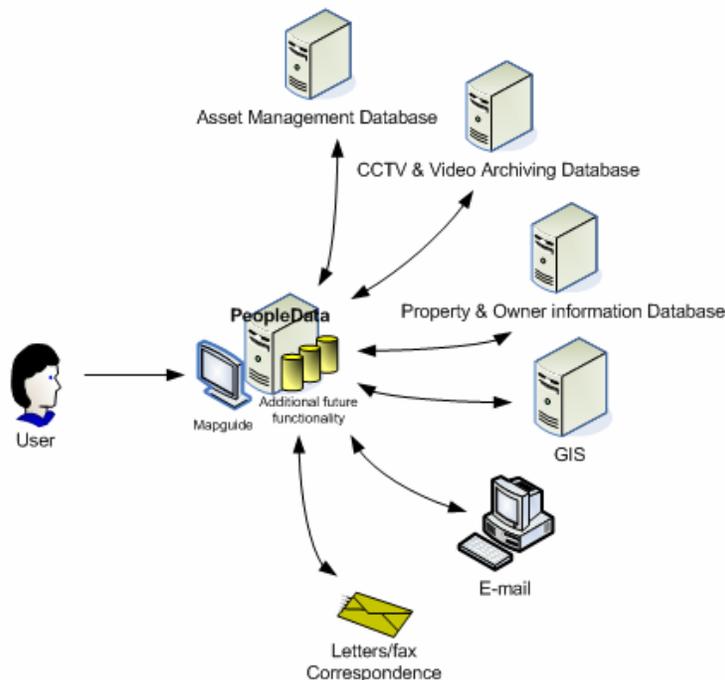
3.1 Simplified Internal Interface

The customer interfaces within our organization's are by in large served by people and based on separate and multiple business process applications, which causes complexity within organization's to increase over time, creating inefficiency and making them less effective at delivering the desired quality of internal and external customer services.

Our analysis has concluded that the key to improving efficiency within an organization is to reduce the complexity of the internal interfaces, by reducing reliance on people at the interfaces with machines for processing information, and by removing the boundaries between business processes.

How this can be done, might simply be explained in Fig 3.1.

Fig 3.1 - Example of a simplified Internal Interface



The example shown in Fig 3.1 illustrates a process that delivers a 'simple' interface, by utilizing a machine to undertake the 'complex' task of processing, linking and sorting large amounts of data and relationships. The use of a machine in this position is more efficient, as machines skills are better and more proficient at providing this role than people.

In essence, this central processing machine is a single on-line data store machine interfacing with the existing business process applications within the organization. The difference between this process and a common 'data warehouse', is that this process takes the formally 'non-transversal' data and converts it into 'transversal data'; in other words, the data previously separated by task-centric boundaries is now able to be connected with 'real world' relationships supplying the users all of the information needed in a single application.

The best application we found that supports this environment is a database called PeopleData.

3.2 People-Centric Databases

A database such as PeopleData is a centralized system, meaning one database with users accessing the database via the organizations internal network or the web.

Two of its important attributes are:

1. Undertake transactional data – i.e. it can import and combine data from other applications
2. Designed to accept change. It has the flexibility to grow as thinking or business changes.

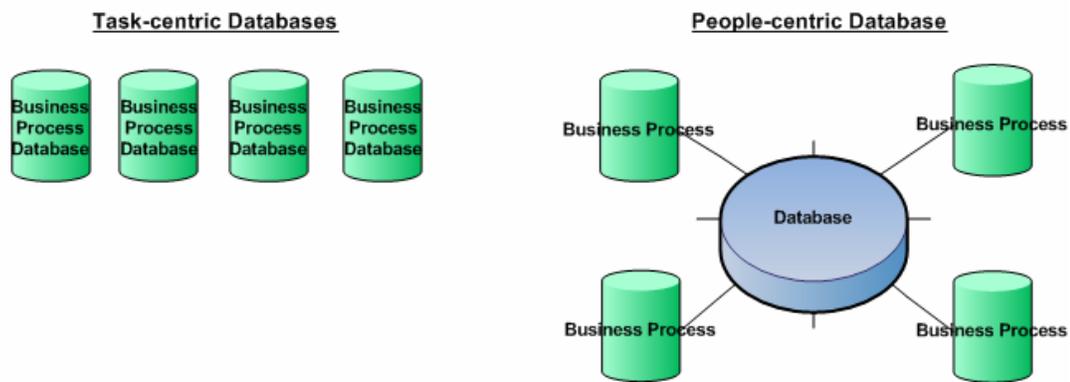
This flexibility is as important in reducing complexity or inefficiency as the ability of combining the organization's applications. This is because PeopleData's flexibility means that the organization will not need to purchase or install any additional applications. Therefore the number of applications within the organization is able to be minimized well into the future, in the long term reducing the requirement of costly capital expenditure.

PeopleData is able to do this because it has been designed around a core data model which does not change. This core data model holds true regardless of the business process – or business. The idea is that the core data model forms the foundation, and the business processes are built around it as the structure of the database. On this basis, an organization can continue to add business processes ad infinitum.

The core data model is principally based on the concept that at the beginning and end of the every business process is a person. All business processes in some manner either interact with, or have some relationship with people. (*This concept should not be confused with the rationalization of people in the role of interfacing with multiple business processes. This core data model is referring to people as the lowest common denominator of a business process as opposed to an interface between them – which we discourage.*)

Where previously we have discussed ‘Task-centric’ databases, peopleData is a ‘Person-centric’ database. Fig 3.2.1 best illustrates the different outcomes of each.

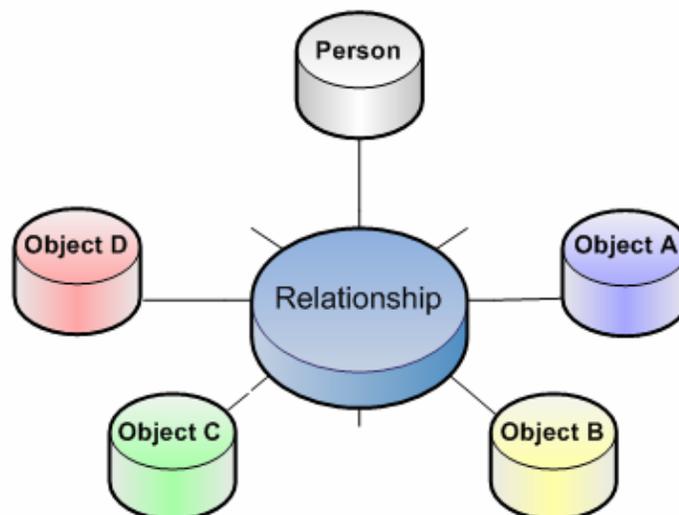
Fig 3.2.1 – Task-centric Vs People-centric



The task-centric databases house their data in business process ‘silos’. A people-centric database connects across the business processes, linked by their relationships.

This relationship process is extremely complex, (ironically this machine complexity is necessary in order to provide simplicity to the users) but can be somewhat represented by the Object/Relationship Model of Fig 3.2.2.

Fig 3.2.2 - Object/Relationship Model

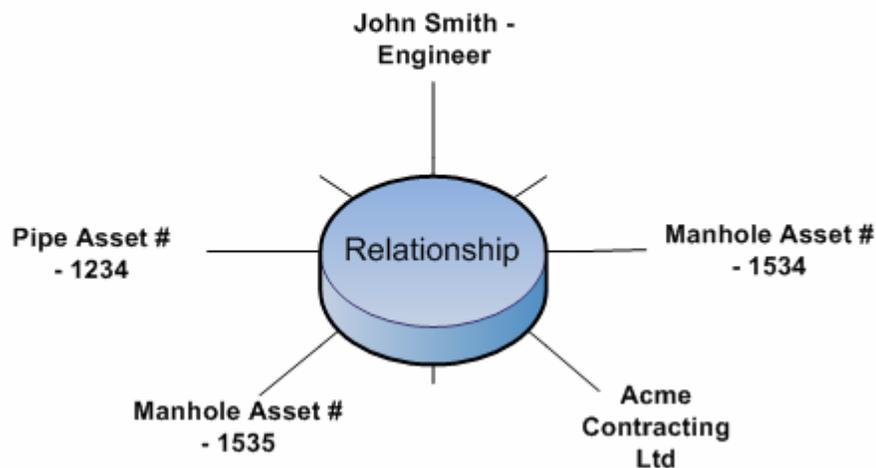


In the Object/Relationship model, objects are connected by their relationship with one another. An object may be a person, asset, organization, address or an event. The relationships may be the 'state' of the object or any association that the database administrator assigns for a given business process; this may be roles undertaken by the object or their interactions.

It is important not to confuse object and state, for example in the case of a drainage pipeline we often refer to a manhole as a node, but in a database it should be referred to as an object, (Asset) with the node being the relationship between the manhole and the pipe.

In any business process there are numerous objects, and usually at least one, but often more people. As an example, Fig 3.2.3 is a simple object/relationship for a CCTV inspection of a pipe line:

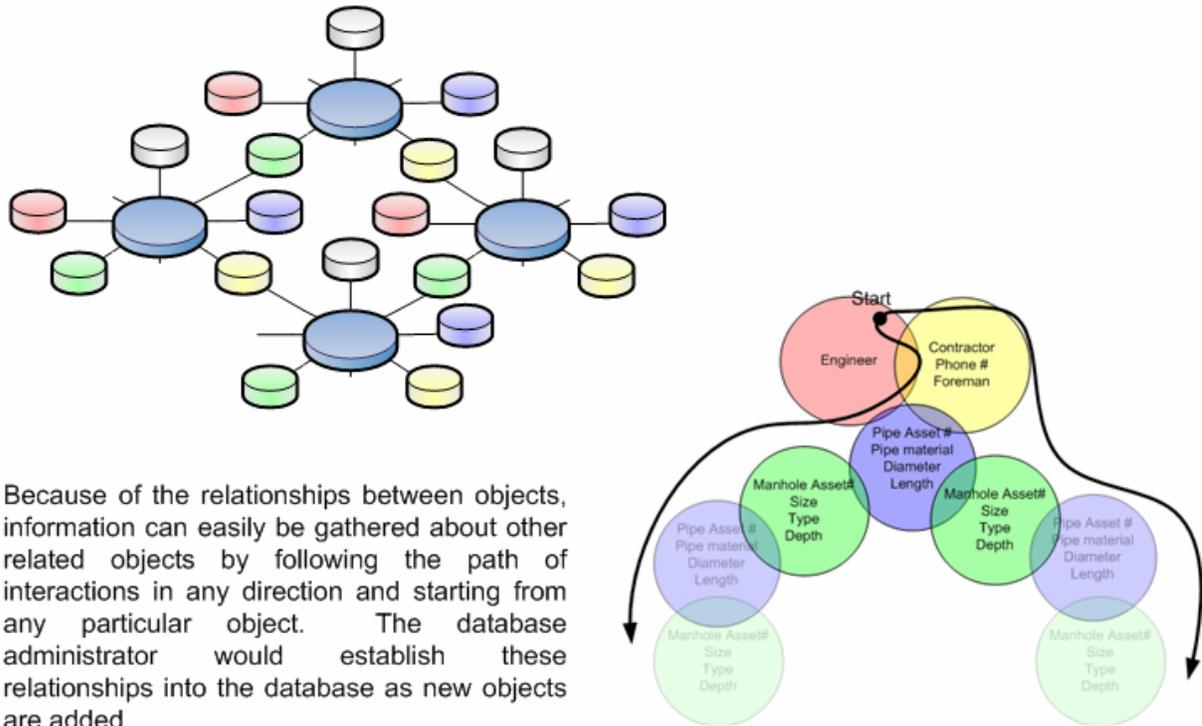
Fig 3.2.3 - Object/Relationship Example



In the Relationship	Name	Plays the Role of	And	Plays the Role of
Contract	John Smith	Engineer	Acme	Contractor
Project	Acme	Contractor	Pipe 1234	Pipe to be surveyed
Node	Pipe 1234	Pipe to be surveyed	Manhole 1534	Upstream Manhole
Node	Pipe 1234	Pipe to be surveyed	Manhole 1535	Downstream Manhole

The example model contains a number of objects; an Engineer, Pipe Asset, Manholes and a CCTV Contractor. The table above details the relationships between each of these objects and how they interact as part of the process for the CCTV inspection of a pipe. Each one of these objects would themselves belong to other relationships (fig 3.2.4). In this manner, information can be compiled and retrieved for any object within the database by following the relationships.

Fig 3.2.4 – Relationship Networks



Because of the relationships between objects, information can easily be gathered about other related objects by following the path of interactions in any direction and starting from any particular object. The database administrator would establish these relationships into the database as new objects are added.

Fig 3.2.4 is a *conceptual* model to illustrate the interaction of relationships between objects, and serves to demonstrate the functionality of a people-centric database. How a user actually interacts within a people-centric database environment is practically a bit different, and PeopleData attempts to keep the interface as simple as possible by operating in the familiar and easy to use Microsoft 'Outlook' type environment.

4.0 In Conclusion

The goal of interface systems is to manage complex relationships in simple and intuitive ways for its users. Too many interfaces in a system are as deleterious to the quality of a company's customer relationships as too few. As Albert Einstein opined, "Everything must be as simple as possible, but not simpler." Today and in the future we will rely on interfaces to facilitate our services and customer relationships.

Because almost all machines have been designed around business processes our interface systems have a natural tendency to grow more complex over time. Companies either add interfaces or elaborate existing ones in response to customer demand and innovation. Without a different way of thinking about our interface systems, this process will go on unmanaged, degrading the quality of the service interactions for customers while increasing the costs in complexity and lack of integration for our organizations. The goal must be clear: If we aim to improve the efficiency and effectiveness of internal and customer interfaces, we

must configure our interface systems in ways that will deliver simplicity by removing the complexity in the network of our organizations machines and optimizing the roles of the expensive and limited people resource.

People-Centric databases such as PeopleData, allow us to *re-imagine* how we can reduce the complexity of our internal interfaces by optimizing the information available to users at a single interface, rationalizing the effective roles of resources, and at the same time providing flexibility to change as the organization changes without the need of adding additional machines and interfaces.

Today we have choices in how we can manage our customer interfaces. We believe that the most important issue to be highlighted is the need for organizations to focus on their interface system. Regardless of the types of interfaces employed, active management of the interface system will improve to some extent the quality and cost of their services. However, a sound interface system, like a good strategy, is best produced by Optimization and flexibility, not by proliferation and compromise.

Acknowledgements

Stephen Macleod Syfir Technology Ltd, for guidance on the understanding of people-centric databases.

References

Hamel, Gary (2000), 'Leading the Revolution', Harvard Business School Press, ISBN 1-57851-189-5

Rayport, Jeferey F and Jaworski, Bernard J (2005), 'Best Face Forward – Why Companies Must Improve their Service Interfaces with Customers', Harvard Business School Press, ISBN 0-87584-867-2.

