A good example of a large scale Business Process Reengineering (BPR) project is the redesign undertaken by Xerox Corporation in 1994. This project was studied by the author in 1996 when it the solution was being implemented and has been described several times since.

The Problem

Non-Production Procurement (NPP), at Xerox, covers all purchases of supplies other than supplies used in the actual production of copying machines. Thus, all office supplies, from desks and personal computers to pencils and stationary comes under the category of non-production procurement.

In early 1994, Xerox was spending about $4.3 billion dollars a year on NPP. Xerox realized that the redesign of this process represented a major opportunity to save money.

The Redesign

A business process redesign team was created that included managers, supervisors and clerical personnel from the various organizations involved in NPP. The redesign team members involved in the work explained how, initially, procurement had been spread throughout the various corporate departments and groups. Moreover, different groups had been established to handle expensive items like desks, or complex items, like computers, while other groups handled more routine items like paper and pencils. Specialists had been established to handle exceptions and rush orders.

The group approached the redesign by trying to think of major changes and simultaneously trying to document what was currently being done to assure that all aspects of the problem would be covered. At the same time, Xerox contracted with an outside consulting group, to survey other organizations to determine the best procurement practices at companies that had a reputation for doing things efficiently. The redesign team studied the results and set its own goals accordingly.

The outside consulting group was also involved in helping the redesign team create a process flowplan that described all of the activities of all of the groups involved in the NPP process. The consultants used diagrams similar to those described in this book, listing customer contacts at the top and departments along the side. Access to databases were listed on separate swimlanes at the bottom of the chart. The initial chart was huge and identified hundreds of different activities. Most were found to be non-value adding activities and were eliminated.

In hindsight, the redesign team spoke lightly of the struggles between different groups as they worked to consolidate activities. Initially, each team member tried to explain why a specific sequence was necessary for handling the unique types of problems his or her specific group faced. As time went on, however, the team members gradually agreed that most of the activity...
sequences were really just variations on a few basic themes. One sequence, for example, involved letting contracts to vendors that would then supply items at a set price.

By mid-1996 the entire NPP process had been reduced to three sequences, each comprising a few activities. The redesign team also implemented several radical changes in the NPP process. For example, credit cards were issued to all managers. The credit cards had established limits and managers were encouraged to use them when they needed to acquire something quickly. By shifting decision-making and responsibility for these unique, rush purchases to departmental managers, a large portion of the NPP bureaucracy was eliminated. American Express agreed to provide reports to Xerox that summarized the use of the credit cards, thereby eliminating the need for new software to monitor the small purchases.

Xerox also decided to identify and negotiate mega-purchasing deals with very large suppliers who could support Xerox throughout the world. By replacing numerous small contracts with a few very large contracts, the team eliminated most of the contracts negotiation people and the numerous problems otherwise associated with monitoring many small contracts.

The team also decided to completely automate access between Xerox managers and the suppliers so that all paperwork would be eliminated. Each manager can use his or her PC to access the supply system and complete orders online. Departmental limits and constraints are all handled by the computer system without any need for intervention by accounting personnel.

Once the team created its SHOULD design, it began to meet with IT people to define the nature of the software system they would need to support the new process. The IT team that joined the BP redesign team preferred using object models. They converted specific activities to use case diagrams and eventually develop object models for each of the major transactions. They then use on OO modeling tool to run simulations on each major set of activities defined by the BP redesign group to see if the new processes would work smoothly. This also allowed the IT team to develop a detailed cost-analysis of the various sets of activities. This work impressed the BP redesign team that said, in retrospect, that they thought the simulation had significantly improved their understanding of some of the changes they had proposed. One sub-process, in particular, turned out to have several bottlenecks that rendered the new process very inefficient. By playing with the simulation, changing the flow and adding more positions to handle exceptions, the BP redesign and IT teams, working together, were able to make the sub-process much more efficient.

After the Xerox IT group and the BP redesign team had completed a complete set of IT requirements for the new NPP process, the IT group turned the requirements over to the BP redesign team that then put the software development effort up for bid.
The Solution

When it was finally completely implemented, the new Xerox NPP process reportedly saved Xerox a very significant portion of the money formerly spent administrating purchasing. Hundreds of activities had been reduced to dozens and numerous redundant sub-processes were now combined into three major sub-processes. Hundreds of suppliers, with all the overhead involved in managing them, had been reduced to four major suppliers, and emergency purchases had been delegated to departments that now relied on credit cards. A complex system of dozens of paper forms had been eliminated and the entire process was now handled, online, by a new NPP software system.

The Xerox NPP process improvement effort is a great example of what one can do when one simply looks for redundancies and duplications and simplifies down to the really basic activities one actually needs. In this case the company didn’t completely reinvent the process, but they simplified it and improved it a many different ways.