



Why Archive Old Research for Data Mining?

With current executives frequently coming from the ranks of financial management, marketing or sales positions after achieving their MBAs, R & D companies are often missing an important view of their business. There are too few executives who have actually been involved in inventing, researching and building products. The result is a short-term view that misses an important element in the research process, one that historically has provided a wealth of intellectual assets on which others can capitalize.

So, what is the justification for preserving intellectual property documents that reflect research that was inconclusive or that did not contribute immediately to development of a commercial product for the company? To answer this question, an executive must understand what leads to discovery, to breakthroughs in research, or to advancing a theory or idea. Talk to any reputable research scientist or development engineer and you will learn that a valuable source of **new** research ideas and foundations come from reading older research reports, technical documents, patents, and even laboratory notebooks. These can prove invaluable for any number of reasons. Some reasons that the earlier work and investment may still return a profitable result and help save costs on new product development are for example:

- Recognition of an old idea as potentially valuable and availability of a novel way to resolve an earlier research barrier
- Confirmation of an experimental laboratory approach without having to rediscover it
- Elimination of the need to test an hypothesis because it had been done
- Establishment of a foundation of ideas for conducting new experiments that might not have been possible because technology necessary for testing was unavailable at the time of the original research
- Resurrection of a patentable idea, which was technically impossible to achieve in an earlier era

There are voluminous examples of research conducted years ago that were preserved and categorized, which have led to valuable commercial development in more recent times. Bell Laboratories, IBM and many pharmaceutical firms are noted for maintaining a high level of pure research to insure a legacy of fundamental and novel ideas to feed a steady flow of new commercial products. Patent activity in these organizations was extremely high to protect concepts that might have commercial or licensing potential. This may have been more likely to happen in an earlier time when executives who founded them managed corporations, or those who had long-term views of an organization they expected to run, well into the future, managed them. It may have had to do with a research environment that was organized around a disciplined, structured process that managers expected their sub-ordinates to follow. Or it may have had to do with the conditioning workers received in their education, to document and maintain records as part of their professional responsibility.

In the business world, no company can survive solely on the expectations of some distant future return on investment in research. However, workers can be disciplined to add value to everything they do now, by ensuring that the lessons of short-term work, which does not move forward, is not lost on the future. Companies that have learned to operate in that mode have a solid base of resources on which to build and a genuine ROI on their net R & D work. These information resources, the products of knowledge workers, may be mined indefinitely to enhance current research.

On the other hand, how many organizations have faded out of existence as they squandered every lesson learned in the frantic and frenzied search for the short-term ROI, to please Wall Street? I've worked in or had as clients more of these organizations than I care to remember. Each of them suffered from a management that missed the lessons of Bell Labs, DuPont de Nemours, Ford Motor Co., 3M, and the Hewlett-Packard (of Hewlett's and Packard's era). For those respected organizations, research was central to ongoing viability, and results were honored with a place in the archives to be brought back, as needed, to move more efficiently, more effectively to the next money-making venture. Old research fed new ideas, but more importantly, it saved the company valuable resources because what had been done in the past did not have to be repeated.

Managers that see the need, and have the will to enforce the discipline it takes to deliver research in the enhanced package of "recoverable knowledge asset," will be substantially more successful over the long-term. Their organizations will be those with substance and genuine potential for longevity and profitability. In these organizations you will also find an atmosphere of collaboration among the scientists and engineers, IT staff and information science technologists. Where executives foster an environment in which teamwork is expected and information is shared, their organizations develop momentum and a pipeline of *mineable* knowledge to fuel sustained growth. – Lynda W. Moulton