

July 2013

# Research, Development & Technology assessment during Acquisition & Mergers

## Executive summary

International capital markets have seen a growing number of corporate mergers and acquisitions over the past few months of 2013. Although this may be just a momentary snapshot of what is happening, a trend appears to be developing, powered by three driving forces, in particular: healthy corporate balance sheets, low interest rates with inexpensive refinancing opportunities and marginal growth. As a result due diligence, the series of exploratory activities used in evaluating a company prior to finalization of the M&A, has been increasing, especially in the US. The traditional approach to due diligence focuses on several key areas: financial, legal and regulatory, and accounting and tax. Without question, each of these areas is highly important but we find that Research, Development and Technology (R,D&T) is largely being ignored and is arguably one of the larger mid to longer term drivers for growth and often the major reason for the M&A in the first place!



nu Angle's view on R,D&T integration after M&A

*"International capital markets have seen a growing number of corporate mergers and acquisitions over the past few months of 2013"*

The integration of research and development units following a merger or an acquisition requires a very broad and widespread integration project using many disciplines. Within integration there are many benefits of a well-managed R,D&T integration, but we find that unintended outcomes due to poor pre-work or inexperienced R,D&T integration can be disastrous reversing these benefits. One reason for the lower effort input into R,D&T pre- and post- acquisition, even though the mid to long-term benefits are substantial, is due to a short termism view. However lower effort in the short term on R,D&T will eventually have a large detrimental effect on the combined businesses in the longer term.

Prior to purchase or merger there are two important technology management questions for R,D&T:

- Within the two technical organizations what are the technical benefits of merger—strategically and organizationally?
- Do the external technical forces pose a threat or an opportunity to the combined concern?

These two questions can and should be answered 'very quickly and together', if you put together a very experienced team made up of both internal and external individuals. If the team is experienced and objective enough it will have most of the answers to the above. We use a very experienced core team and a selected group of World experts who can very effectively and efficiently answer these questions based on their combined experience. We can demonstrate success in several cases.

*"One reason for the lower amount of effort input into R,D&T pre- and post- acquisition, even though the mid to long-term benefits are substantial, is due to a short termism view."*

## Introduction to R,D&T and post merger integration

*“In the first part of 2013 international capital markets have seen an even higher growth in the number of corporate mergers and acquisitions”*

In 2011, investment banks reported that more than 21,000 mergers and acquisitions were completed, with a collective price tag estimated at more than \$1.9 trillion. Although they are known as highly effective means of achieving growth and a strategic advantage, these transactions have their pitfalls. Statistics indicate that a third of these deals fail, and another third do not bear out the expectations of the merger partners.



Several factors are influencing merger and acquisition activity. Achieving economies of scale, broadening geographic market coverage, and more effectively competing have helped to create a flurry of acquisitions in the marketplace but some parts of the business are ignored in the process.

In the first part of 2013 international capital markets have seen an even higher growth in the number of corporate mergers and acquisitions. Although this may be just a momentary snapshot of what is happening, a trend could develop, powered by three driving forces in particular: healthy corporate balance sheets, low interest rates with inexpensive refinancing opportunities and marginal growth.

As a result due diligence, the series of exploratory activities used in evaluating a company prior to finalization of the M&A, has been increasing, especially in the US. The traditional approach to due diligence focuses on several key areas: financial, legal and regulatory, and accounting and tax. Without question, each of these areas is highly complex and important but we find that, as in the past, Research, Development and Technology (R,D&T) is largely ignored but is one of the major mid to longer term drivers for growth.



*“The traditional approach to due diligence focuses on several key areas: financial, legal and regulatory, and accounting and tax but we find that, as in the past, Research, Development and Technology is largely ignored”*

Acquisitions involve two major components, each of which influences their success: (1) strategic and financial analysis before making the deal and (2) firm integration after the deal is closed. Both components are crucial if the rewards are also to be achieved in R,D&T. The first component should focus on the benefits of improved productivity of R,D&T versus the costs, risks and management time.

In component (2) an R&D acquisition is successful if the buyer can then integrate the acquired company in a way that increases performance through the realization of knowledge synergies. Knowledge synergies are achieved, for example, when the parent and the acquired unit increase revenues or reduce costs through jointly developed new products and the use of previously unknown process know-how.

## More short term effort is required in R,D&T integration during and after M&A

*“The potential benefits of a well-managed R,D&T integration include: Increased critical mass in specific R,D&T programs, Technical synergies can be exploited, Access to new competencies / technologies and Increased economies of scale through technology platform management for new products”*

There are several strategic drivers or reasons why you would want to get involved in an M&A, according to Mark N. Clemente and David S. Greenspan, authors of the book: Winning at Mergers and Acquisitions: The Guide to Market Focused Planning and Integration. These are:

- Effecting organizational growth
- Increasing market share
- Gaining entrée into new markets
- Obtaining new products
- Keeping pace with change

R,D&T has a big effect on all of the above and the potential benefits of a ‘well-managed R,D&T integration’ include:

- Increased critical mass in specific R,D&T programs to increase growth
- Technical synergies can be exploited to increase market share
- Access to new competencies / technologies to keep up with the pace of change and gain an entrée into new markets
- Increased economies of scale through technology platform management for new products

These benefits give rise to substantial growth in the future. These benefits are also discussed in the many articles written on well managed R&D post-merger integration carried out over the last 20 years. One important headline is the response given to the questions on the benefits of good R,D&T post-merger integration (Figure 1).

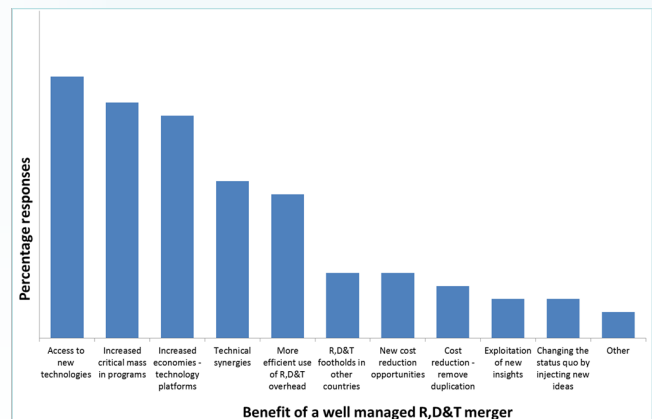


FIGURE 1: BENEFITS OF A WELL-MANAGED INTEGRATION OF TWO R,D&T GROUPS

Source, nu Angle analysis plus:

- Integration and Reorganisation of Industrial R&D: Deficits and Perspectives of Empirical Research, Christoph Grimpe, December 2005
- Brenner, M. S. (1990). R&D cut before - not after - acquisition. Research Technology Management, 33, 15-18
- Chakrabarti, A. K. and Souder, W. C. (1987). Technology, innovation and performance in corporate mergers: A managerial evaluation. Technovation, 6, 103-114

## Low effort in R,D&T relative to other areas of the business

*“It is unexpected and surprising the low amount of actual effort often put into R,D&T work pre- and post- acquisition relative to the other areas of the two businesses like finance, operations and marketing”*

*“Due to the complex issues above we use a very experienced core team and a selected group of World experts who can very quickly answer these questions based on their combined experience”*

It is unexpected and surprising the small amount of actual effort often put into R,D&T work pre- and post- acquisition relative to the other areas of the two businesses like finance, operations and marketing. In the sectors that rely on technology as a source of differentiation (e.g. Pharma, OTC, Consumer Goods, Electronics etc.) the impact of high quality rapid integration of R,D&T carried by an experienced global team of advisers is enormous.

A diagram of the relative amount of effort (in resources and external costs) versus the actual mid- to long-term rewards taken from a number of sources shows almost no effort is expended on R&D during post integration (figure 2). Research is clearly the highest risk and most difficult to assess during pre- and post-merger but has the highest long term reward. It has the potential to ‘change the rules of the game’ in markets and create ‘completely new growth platforms’ out of the integrated companies.

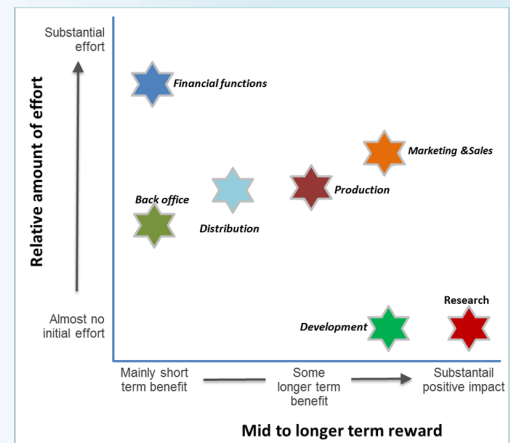


FIGURE 2: THE AMOUNT OF EFFORT PUT INTO PMI BY A TEAM AND THE LIKELY REWARD IN THE LONGER TERM

One reason for the lower effort on R,D&T work pre- and post- acquisition, even though the mid to long-term benefits are substantial, is the time to business impact. A short term view will eventually have a detrimental effect on the business. Figure 3 is based on the views of many executives and a number of articles written on the subject

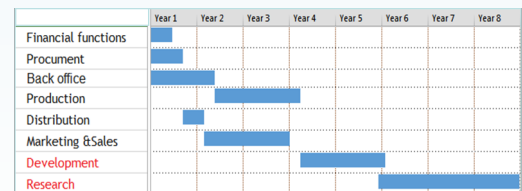


FIGURE 3: TIMESCALES TO POSSIBLE FULL BUSINESS BENEFIT IN DIFFERENT AREAS OF THE BUSINESS

Source: nu Angle analysis plus: Hagendoorn, J. and Duysters, G. (2002). The effect of mergers and acquisitions on the technological performance of companies in a high-tech environment. Technology Analysis & Strategic Management, 14, 67-85.

Due to the complex issues above we use a very experienced core team and a selected group of World experts who can very quickly answer these questions based on their combined experience. By operating as a flexible virtual network with senior peers we avoid the classical problem of having to deploy young consultants with little or no relevant experience simply because they are available at the time.

*“Prior to purchase or merger there are two important technology management questions. These two questions can and should be answered very quickly, with minimal analysis if you put together a very experienced team. If the team is experienced and objective enough it will have most of the answers at its finger tips”*

## The approaches used

Objective and in-depth effort is therefore needed for R,D&T to ensure the longer term large business benefits of PMI.

Prior to purchase or merger there are two important technology management questions:

1. Within the two technical organizations what is the technical benefits of merger? What are the similarities and crossovers and can they be exploited. Where are the likely economies of scale and where is there room for cost reduction?
2. Do the combined external technical forces pose a threat or an opportunity? Where are these likely to come from and can the joint technical organisation deal with them?

These two questions can and should be answered very quickly, with minimal analysis if you put together a very experienced team. If the team is experienced and objective enough it will have most of the answers at its finger tips.

We approach the first question within the framework of seven important common elements found in all R&D organisations.

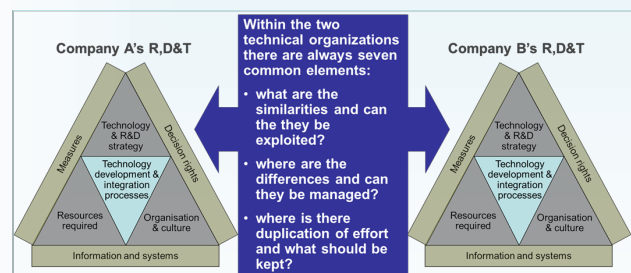


FIGURE 4: TESTING THE SEVEN POSSIBLE ELEMENTS OF TWO R,D&T ORGANISATIONS

Within each element there are a set of important questions as shown in figure 4.

Our overall approach is centered on a solid process carried out by a senior joint team with our clients. This process is modified to fit different PMI situations. A diagram of the

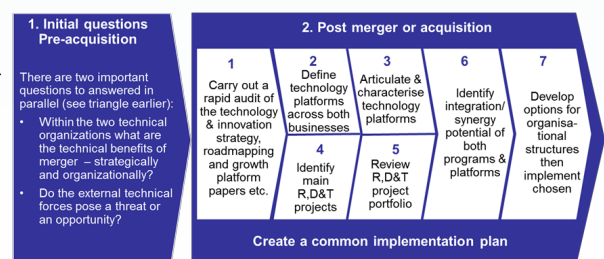


FIGURE 5: THE STRUCTURED BUT FLEXIBLE APPROACH USED

main elements of the process is shown in figure 5. Following the original pre-acquisition questions there are a set of interlinked tasks aimed at delivering the right set of R&D programs along with managed technology platforms and the optimum structure for the integrated R&D. We then create a common implementation plan agreed by senior management.



*“All these associates are very experienced in many aspects of technology management and PMI ”*

### About nu Angle

*We were formed over 8 years ago to assist senior management with technology and innovation management issues. We made a large investment in a growing network of many thousands of experts and software making us able to provide technical and commercial advice that companies many hundreds of times larger than us, find impossible to replicate. The two founders are:*

- **Dr Steve Bone** trained as chemist and materials scientist. He has over 25 years' experience in technology and innovation management.
- **Dr Peter Allen** trained as a physicist and has 20 years' experience in Technology and innovation consulting

## Our senior team

All these associates are very experienced in the many aspects of Research, Development and Technology Management and M&A. We normally use a core team of 2-3 associates and 10-15 experts sourced globally. All the projects are managed by one of the founders of nu Angle and also have access to many other technical experts from a large database. Typical team members include:



**Dr Richard Philpott:** PhD in biochemistry. Number of R&D leadership positions in Blue-chip companies. Richard now focuses as an advisor to healthcare, life and chemical science companies.



**Mark Gallon:** graduated in chemistry and joined ICI Colours & Fine Chemicals, where he held several international marketing positions. He began his consulting career with PA Consulting Group in 1989. He is an expert in due-diligence and technical core competency thinking.



**Dr. A. Robert Wasson** is based in Pittsburgh. Has a Ph.D. in Materials Science and Engineering as well as a S.M. (M.B.A.) in Management. He has spent over 16 years in management consulting roles with A.T. Kearney, Strategic Decisions Group, Toffler Associates, and Kalypso. His consulting focus has largely been across all aspects of the idea-to-commercialization process



**Dr Yousef Zawahreh** trained in biomedical materials science. He conducted research into materials for orthopaedic implants, with an emphasis on advanced polymer composites. Now working as a technology scout, he identifies and evaluates external technologies for leading multinational corporations

### Recent cases in R,D&T pre - & post merger integration

- For a UK OTC company we assisted with the assessment of potential new technologies prior to acquisition of another similar company
- For a recently acquired fan and motor company we assessed the important technology platforms to manage and put in place the most relevant R&D structures
- We carried out a due diligence of possible companies in building products and advanced materials that would add to the company's growth platform strategies
- We examined possible companies in the manufacture of a number of gases that would add to the technology strategy objectives of a European chemicals company