

3M

3M has been known for decades as an entrepreneurial company that pursues growth through innovation. It generates a quarter of its annual revenues from products less than five years old. 3M started life as the Minnesota Mining and Manufacturing Company back in 1902. Its most successful product - flexible sandpaper - still forms an important part of its product line but this now comprises of over 60000 products that range from adhesive tapes to office supplies, medical supplies and equipment to traffic and safety signs, magnetic tapes and CDs to electrical equipment. Originally innovation was encouraged informally by the founders, but over more than a century some of these rules have been formalised. But most important of all there has built up a culture which encourages innovation. And because this culture has built up a history of success, it perpetuates itself.



3M started life selling a somewhat inferior quality of sandpaper. The only way they could do this was by getting close to the customer - demonstrating it to the workmen that used it and persuading them to specify the product - an early form of relationship selling. This was the first strategic thrust of the fledgling business - get close to the customer and understand their needs.

However, the company was desperate to move away from selling a commodity product and competing primarily on price and its closeness to the customer led it to discover market opportunities that it had the expertise to capitalise on. The first such product was Three-M-Ite™ Abrasive - an abrasive cloth using aluminium oxide for durability in place of a natural abrasive. This was followed by waterproof sandpaper - an idea bought from an inventor who subsequently came to work for 3M. This was followed shortly by Wetordry™ - a product designed for use by the car industry in finishing body-work. And with this the second strategic thrust of the company was developed - to seek out niche markets, no matter how small, which would allow it to charge a premium price for its products. The company began to realise that many small niche markets could prove to be more profitable than a few large ones.

In the 1990s this began to change somewhat to the extent that some technologies became more sophisticated and the investment needed to develop new products increased. Therefore the return required became larger and markets needed correspondingly bigger. Luckily the world was increasingly becoming a global market place. At the same time, competition was becoming tougher and the rapidity of technological change and shortening of product life cycles made 3M recognise the need to dominate any market niche quickly. Speed of response was vital. By the 1990s, many of the market niches 3M was pioneering were turning out to be not that small at all, particularly in the global market place. So, the approach remained the same, but the speed of response and size of market niche, world-wide, increased.



Case Studies in Entrepreneurship

The company really started to diversify when it entered the tape market in the 1920s, but even this built on its expertise in coatings, backings and adhesives. What is more the way the first product evolved demonstrates perfectly how an entrepreneurial architecture works. By being close to its customers 3M saw a problem that it was able to solve for them through its technical expertise. In selling Wetordry™ to car-body finishers, an employee realised how difficult it was for the painters to produce the latest fad in car painting - two tone paintwork. The result was the development of masking tape - imperfect at first, but developed over the years 'out-of-hours' by an employee to what we know it to be today and from that technology developed the Scotch™ range of branded tapes. So, the third strategic thrust was developed - having identified a market opportunity through closeness to the customer, diversify into these related areas. Once 3M found a niche product to offer in a new market, it soon developed other related products and developed a dominant position in the new market. In the 1990s 3M came to recognise that it did best when it introduced radically innovative products into a niche market in which it already had a toe hold.

This experience also taught 3M the value of research but in particular to value maverick inventors who were so attached to their ideas that they would push them through despite the bureaucracy of the company. It was in the late 1920s that it developed the policy of allowing researchers to spend up to 15% of their time working on their own projects. To this day, it tries to make innovation part of the corporate culture by encouraging staff to spend 15% of their time working on pet ideas that they hope one day will become new products for the company. They can also get money to buy equipment and hire extra help. To get an idea accepted, they must first get the personal backing of a member of the main board. Then an interdisciplinary team of engineers, marketing specialists and accountants are set up to take the idea further. Failure is not punished, but success is well rewarded.

Perhaps the best known contemporary example of the success of this policy is the development of the Post-It® Note by Art Frye in the 1980s. He was looking for a way to mark places in a hymn book - a paper marker that would stick, but not permanently. At the same time the company had developed a new glue which, unfortunately as it seemed at the time, would not dry. Art spotted a use for the product but what was different was the way he went about persuading his bosses to back the project. He produced the product, complete with its distinctive yellow colour, and distributed it to secretaries who started using it throughout 3M. Art then cut their supplies, insisting that there would be no more unless the company officially backed the product. The rest is history.



So the fourth strategic thrust of the company was developed - to pursue product development and innovation at every level in the organisation through research. This was formalised when the Central Research Laboratory was set up in 1937, but maverick research continued to be encouraged. In 1940, a New Product Department was developed to explore the viability of new products or technologies unrelated to existing ones. In 1943, a Product Fabrications Laboratory was set up to develop manufacturing processes. In the 1980s four Sector Labs were created with a view to being more responsive to the market place and undertaking medium-term research (5-10 years); Industrial and Consumer, Life Sciences, Electronic and Information Technologies and Graphic Technologies. The Central Lab, renamed the Corporate Lab, was maintained to undertake more long-term research (over 10 years). In addition most of the Divisions had their own Labs undertaking short-term, developmental research (1-5 years).

Case Studies in Entrepreneurship

3M has always been admired for its ability to share knowledge across the organisation and link technologies to produce numerous products that could be sold in different markets. One example of this is Scotchlite™ Reflective Sheeting used for road signs, developed in the 1940s - in fact as a result of failed research to develop reflective road markings. This combined research from three different laboratories to produce signs with a waterproof base onto which a covering of an opaque, light-reflecting pigment was added followed by microscopic beads. This was all sealed with a thin coat of plastic to ensure weather durability. Strategy five had emerged - get different parts of the organisation to communicate and work together and, most important of all, share knowledge.



This became formalised in the 1950s with the establishment of the Technical Forum, established with the aim of sharing knowledge across the company. It held annual shows. Out of this came the Technical Council, made up of technical directors and technical personnel, which met several times a year to review research and address common problems. Alongside this the Manufacturing Council and then the Marketing Council were established. At the same time Technical Directors and researchers regularly moved around the different divisions. The fifth strategy was in place - share knowledge.

The culture in 3M evolved out of its place of origin and has been called 'Minnesota nice'. It has been described as non-political, low ego, egalitarian and non-hierarchical as well as hardworking and self critical. It has also, at least in its earlier days, been described as paternalistic in its approach to employees. Above all, 3M is achievement orientated and achievement, particularly in research, was rewarded, often through promotion. For example successful new product teams were spun off to form new divisions. The leader of the team often became general manager of the new division and this was seen as a great motivator. Lesser achievements were also acknowledged. Researchers who consistently achieved 'high standards of originality, dedication and integrity in the technical field' - as judged by their peers, not management - were invited to join the exclusive 'Calton Society'. The 'Golden Step' and 'Pathfinder' awards were also given to those helping develop successful new products. Achievement was lauded at all levels. Strategy six was emerging - encourage achievement through reward.

Today 3M face many challenges to maintaining its reputation for innovation. As it becomes larger and more complex, involved in different markets with different products and technologies, at different stages of their life cycle, it recognises that different managerial approaches may be necessary. The 'maverick', high risk approach to research and development may not be appropriate in certain sectors. The 25% rule - the proportion of new product sales - may not be achievable by all Divisions. 3M also faces stiffer competition which means that cost economies have had to be made to maintain profitability. As a result the 15% rule - slack time to research new products - is under severe pressure, to the point where it is described as more of an attitude rather than a reality. Nevertheless, 3M has for over a century successfully practised corporate entrepreneurship.

Case questions:

1. Describe the organisational structures and devices 3M uses to encourage entrepreneurial activity. Why do they work?
2. How does 3M distinguish between incremental and fundamental innovations?

3. Describe, as best you can from the case, the culture of the organisation. What does this depend upon?
4. Why has 3M been such a successful innovator for so long?
5. Can other companies just copy 3M's structures and culture and become successful innovators also?