

Paul Myners' Speech

Science and the City
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1. The Chinese have a saying:

"The participants' perspectives are clouded while the bystanders' views are clear"

The proverb sums up the situation facing us as we consider the relationship between the business and scientific communities in this country.

2. The overwhelming majority of British businesses, and investors in these businesses, see that scientific breakthroughs and the development of these breakthroughs into technology solutions that have commercial applications are fundamental to the success of UK plc.
3. This observation goes beyond economic sectors that are traditionally regarded as technology led – pharmaceuticals, IT, telecommunications, defence. It applies equally to sectors as diverse as primary extractive, financial services or retailing. Whilst the scale of investment and the timeframes may vary between industrial sectors, technology and its conversion to marketplace applications affects us all.
4. We are fortunate in this country to have a government that recognises the need to encourage the creation of a science-based economy through the development of closer links between business and academia. This government has stated its commitment to making this country amongst the best places in the world to conduct R&D and has already made significant improvements in the regulatory structure and the provision of R&D tax credits for both large and small companies. It is fair to say that the UK still has some way to go, which in part reflects the inevitable lag between government intent and delivery, but many of the conditions for achieving this goal now appear to be in place.
5. Yet despite this commitment from all sides, participating in the 'technology game' on a day-to-day basis is a different matter. As the proverb states, our perspectives become clouded. The business world still has an uneasy relationship with science and technology and at times a reluctance to put its money where its mouth is. So we find ourselves in the rather odd situation where both investors and businesses want the same end result yet quibble about each others' tactics.
6. On the one hand the City is castigated for the short-termism that seems to preclude the long term investment required to bring new technology to fruition. On the other

hand, it can justifiably point to any number of over-hyped, expensive, delayed technologies that have failed to deliver commercial applications.

7. I hope to provoke some debate about this apparent stand-off and also to provide practical examples of what we have done at Marks & Spencer to make best commercial use of the opportunities that new technology offers our company and our customers. I will conclude by offering some thoughts on how I believe the City and businesses can help each other to better assess the commercial impact of new technologies on future value.
8. Let me start by briefly reflecting on how I believe the financial community views this issue at present. There appears to be a gap in understanding between some investors and companies about the impact of R&D spend on corporate valuation. Given that R&D is at the forefront of much of the technology developments that have brought so much material benefit to society, as well as making business much more efficient, it is puzzling why this should be the case.
9. So from where does this lack of understanding come? From the perspective of the City this lack of understanding appears to be the result of two factors - the first technical, the second behavioural.
10. The first reason concerns different accounting standards used around the world which make meaningful comparisons between different companies difficult. For example, some countries regard R&D as an upfront cost, whereas others allow it to be at least amortised over a period of time. As a result it is genuinely difficult at times to be precise about the impact of R&D expenditure on corporate valuation. The introduction of international accounting standards, common to all territories, will address this issue.
11. More interesting for us here today is the second reason, which suggests that companies can do much to improve their communication to the investment sector about R&D expenditure. Interestingly this perceived failure of communication comes in two very different forms – on the one hand not enough information, and, on the other, too much hype.
12. Let me look at the first of these – not enough communication. The perception amongst many investors is that too often R&D investments are treated as internal management decisions, made with little fanfare and very often without explanation to investors about what the potential long term benefits to the business might be. As a result these decisions are not well understood and the investment is not accurately factored into the share price.
13. The other extreme is where companies succumb to the desire to hype-up the commercial potential of new technologies. Unfortunately, investors have in the past been seduced by overplayed R&D claims, where marketing promises have far outstripped deliverable commercial success. Obvious examples that spring to mind include genetically modified food, the internet bubble and nanotechnology.

14. There is an understandable reluctance amongst the investment community to take everything it is told at face value. At the end of the day investment valuation takes into account a multitude of factors – and it is not possible to isolate the impact of one particular factor on share price. So given the situation I have just outlined – insufficient communication on the one hand, a degree of scepticism on the other - it is no surprise that the share price in many instances appears to reflect a company's technology track record more than it does its future potential. In other words, the markets will ascribe value to an as yet unrealised technology if a company has a proven record of success through the previous successful application of technology.
15. However, this situation of ascribing value on the basis of past performance rather than future potential may well change when the Operating and Financial Review (OFR) comes into effect. Amongst the recommendations in the 2002 Company Law Review is the need for companies to improve information provided to shareholders to better enable them to assess company strategies and their likely success. The Review proposed that this should take the form of an enhanced Directors Report and that it should include descriptive details of the company's operations, its financial position and its future strategies and prospects. This very will clearly include investment in R&D and science.
16. So the feedback seems clear. At the moment there is often no clear or accurate link between investment in R&D and share price. It is only by talking, engaging and debating with investors that this gap in understanding can be bridged. Indeed in due course the law will require that we as companies do so. When it comes to investment in R&D or in new product technology, business needs to explain to the City how technology investment is of benefit and how it creates value. Let me now talk about how we do this at Marks & Spencer.
17. Technology and its application for customer benefit is at the heart of our business. Put simply, we could not function without it and investing in new technologies is seen as absolutely critical for our future success. Each one of our divisions has a specific technology function and we employ more than 100 technologists across the business. Working alongside colleagues in other departments, their job, in part, is to anticipate customer needs and to find technologies to satisfy these needs. In fact many of the great steps forward we have made as a retailer are because we anticipated a customer need and found the technology to satisfy it.
18. How does our approach look in practice? Firstly, we tend not to invest in pure science R&D for the sake of it. Our approach is to draw on scientific breakthroughs, on developments in technology and on knowledge in many different fields, and to "bundle" these together to deliver customer benefits. This "bundling" approach requires us to have excellent links with our suppliers – not just those who make our products but also with those companies beyond them who make their raw materials (e.g. fabrics and dyes) and machinery. It also requires us to reach out into the world of academia to identify potential new break-through sciences that may shift our marketplace in the future.

19. And if we cannot find what we are looking for, or if we believe there to be a gap in basic scientific knowledge, then we will not hesitate to fill it. For example, we created and fund the Cambridge Chair of Farm Animal Health, Food Science and Food Safety at the Centre for Veterinary Science to fill a gap in knowledge in food science. This Chair has helped solve one of the biggest food scares of the 1990's, salmonella in eggs.
20. Our investment approach to new technology is just like any other company. New technology projects have no God-given right to exist in M&S and have to satisfy the same stringent investment criteria as any other project in our business – be that store development, a new IT system, or a new logistics project. Each year each Commercial Division has to identify its likely investment needs for new technology and make a case to the plc board for the appropriate funding. As I said earlier, if a new technology project cannot demonstrate how it will create value for our customers, it does not see the light of day.
21. Let me describe two new technology projects that did get the investment 'green light' and that demonstrate the successful use of technology to create customer benefit - the machine washable suit and 'ready meals'.
22. I will start with the machine washable suit - possibly a rather prosaic example in a world of biosciences and space-age technology, but one with huge commercial value to us. As I said before, at Marks & Spencer we are always thinking about how the customer will benefit from new technology. In this case our customers were telling us that dry cleaning was seen as a bind, as expensive, as time consuming and as damaging to their clothes. So we set our supply chain and technology teams a challenge – to develop a machine washable suit that retains its shape, can be washed without any special instructions and can be sold for £125.
23. It took three years, and innovations across literally dozens of fibres, components and manufacturing processes, but they stuck to the task and delivered the suit. On reflection, this was not a journey which delivered any sudden step changes in understanding, no 'eureka' moments if you like. Rather it was the clever and persistent connection of lots of strands of technology over a period of time that delivered the result. From a commercial perspective, which brings us back to the City, this breakthrough has helped enable us to sell over £40 million of suits during the last three years, further increasing our share in a market characterised by a lack of innovation, and also won us a Queen's Award for Innovation in 2002.
24. The other example comes from our food business and concerns the development of ready meals, now a multi-billion pound business, which we first pioneered by bringing together advances in four key areas of science.
25. First in microbiology, that allowed us to create new ultra-clean factories. Then in polymer science that delivered packaging that could be used in the oven or microwave. Colloid science gave us 7 colour printing that allowed customers to see food accurately pictured on the packaging. Lastly, nitrogen-based refrigeration allowed us to create a cold chain from factory to store. Without any one of these developments, ready meals could not have been created.

26. Before summing up, I would like to touch on one other critical issue that affects all who work with new technologies. The issue of consumer trust. In a consumer market, commercial success is not just dependent on clever technical solutions, it also depends on trust.
27. No one in this room needs reminding of the recent consumer scares we have been through, scares that have affected the trust of all of us in new technology. From the dramatic (genetically modified food) to the more mundane (preservatives in fruit and vegetables), technology is not accepted automatically by consumers.
28. What these scares have taught is that, in business, we can no longer hide behind regulators, government or scientists. We can no longer hold on to the naïve belief that because technology has been approved by one or other of these bodies it is automatically safe. We have to take our own view on new technology and be able to demonstrate that our own controls and safeguards meet our customers' expectations.
29. Let me offer a small example of what I am talking about. At M&S we have done much to develop the use of RFID microchips for use in the retail supply chain. This effectively involves using microchips in products to improve product availability for our customers and also to reduce our supply chain costs. We have already used the technology on three million food distribution trays used within our supply chain. The technology has been piloted on men's suits and shirts in one store and is now in a further nine stores to demonstrate that there is a clear and compelling business case for a full roll-out. The results so far have been encouraging.
30. So far so good. The customer wins, we win, our shareholders win. Now let me factor in the issue of consumer trust. There are mounting concerns that embedding microchips in things we buy has implications for our privacy. It may seem far-fetched to go too far down the 'big brother' route with this particular technology, but the consumer has been sufficiently 'bruised' by other such incidents that we have to take the risk of a major backlash against the technology seriously.
31. So our challenge in this case is twofold – to manage the development of the actual technology as well as managing the issue of consumer trust. The practical solution we have come up with, through dialogue with the NGOs involved, has in actual fact proved straightforward. The microchips will be placed in a disposable swing ticket rather than hidden in actual product, a solution that has proved neither difficult nor expensive to implement.
32. We will continue to take this dual approach to developing technology and managing trust at the same time. For example, M&S is leading a group of retailers and chemical companies to better understand the balance between consumer trust and chemical innovation. Indeed we believe we have come to the point where certain brands in a marketplace will be trusted by the consumer to apply a new technology, whilst other brands in the same marketplace will not be. In other words, who applies the technology will be as big an issue as the technology itself and we may not have the situation whereby society either rejects or accepts a technology wholesale.

33. Let me close now by summarising where I believe all of this leaves the city and the issue of R&D. For certain types of business – the ‘usual suspects’ I referred to earlier – pharmaceuticals, IT, telecommunication, defence business – the sums of money involved are so large and the influence of R&D on commercial success so great, that R&D spend will remain a key and obvious issue for investors.

34. The more interesting conclusions apply to organisations where this is not the case, those for whom the potential of technology is less obvious and perhaps spread across different types of technology and science. In cases such as these I believe the investment community needs to consider the following:

- How well does the business appear to understand technology – is it a market leader or a follower when it comes to adopting new technology?
- What is its track record to date in successfully taking technology from the R&D phase to commercial success
- How well does the business link technology and customers’ needs?
- How well is the business connected to its suppliers, to their suppliers and to the world of academia?
- Does it have the right people to translate and manage scientific advances into new technology?
- Does it understand the wider, swirling debate about trust and how this affects customer perceptions of technology?

35. But the challenge is not just for investors to better understand how business uses technology, it is also for us in business to better explain ourselves. We have a communication challenge on our hands. We have not articulated sufficiently well the essence of how technology powers our businesses, so we cannot blame investors if they do not fully understand exactly how it helps us to compete and differentiate ourselves from the competition. Nor have we communicated well enough to our customers the importance of the technologies to the products and services we provide. The Financial & Operating Review will force this issue up the management agenda, but I believe we need to start this process now. There is an opportunity here for the wider science community to shape these protocols.

36. What is beyond dispute is that technology and the investment in R&D that underpins it will only ever become more important in the future. There is undoubtedly a clear need for the City and business to work closer together - to communicate effectively; to discuss and debate; and to cooperate in a meaningful way so to understand the true value of investment in technology and its implications for short and long term commercial success.