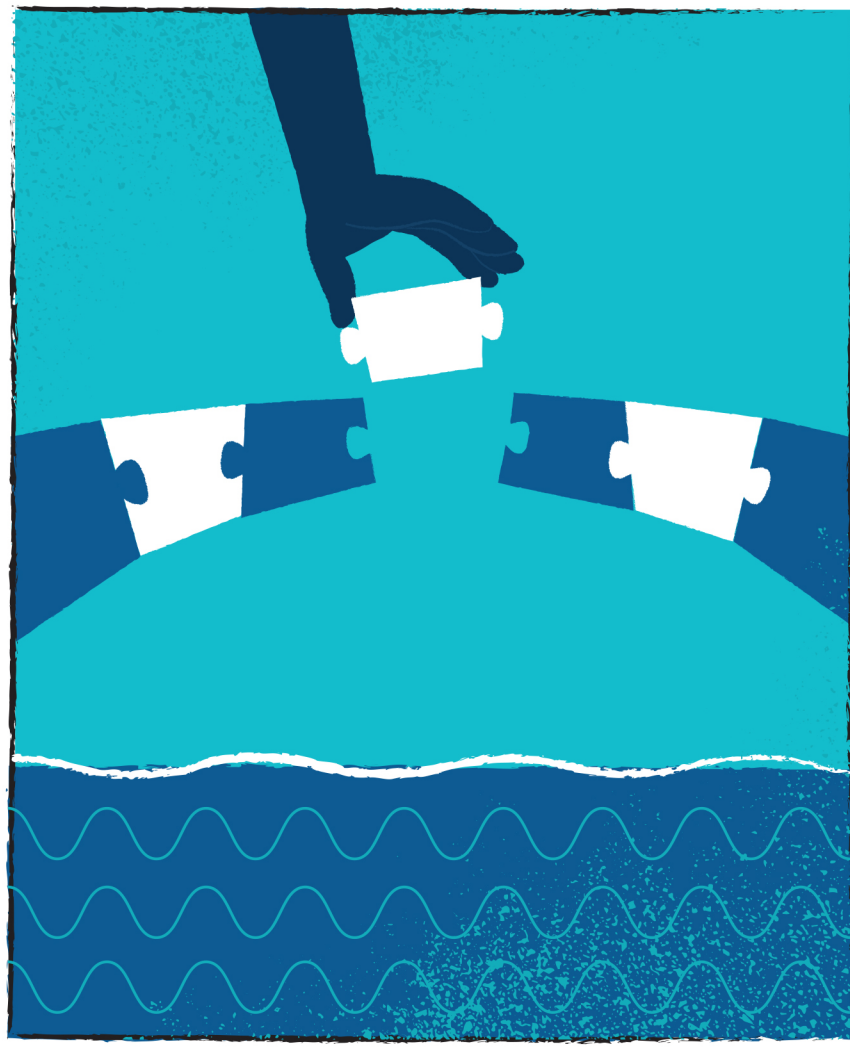
MANAGEMENT FOR SCIENTISTS



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INVESTOR IN PEOPLE

To the lovely ladies of my life: K, A & S.

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Foreword

Normally when asked to write the foreword to a book one is flattered, agrees but then sometimes thinks, OK now what shall I say? It then becomes in danger of being a chore. When I was approached I confess to the first part but in this case the rest was easy and a pleasure, because the strength of this book and the need it fills, are so self-evident.

We live in a world where science and technology increasingly drive success in the corporate world either as the core business and/or a key enabler of it. This means professionals and academics from the Science, Technology, Engineering and Mathematics (STEM) disciplines learning how the commercial world works. Contributing to an endeavour and forming partnerships requires working as a team and to do this you need to understand the context, drivers and needs of those you work with.

Many academics attempt to understand this world by taking a postgraduate course, sometimes an MBA. Others, and I confess to being in this category, learn through experience; this of course takes sometime and you make mistakes along the way; you of course learn from these but they often represent lost opportunities.

This book bridges the gap, it is a bite-sized (but no less rigorous for that) introduction to business for those in the STEM disciplines. It doesn't require the expense and intense application of an MBA or learning the hard way over a good chunk of a career.

It has two other clear virtues, firstly it is not a popular and rather general guide written by a management guru such as you may find in a high street bookshop (though the best of these can be good), but it is specific and tried and tested. It has been delivered in various forms, both stand alone and as a part of other courses, many times to a large number of participants from a range of STEM disciplines and from across the globe.

Secondly, and in my view, its most important feature is that it is delivered by scientists for scientists; this is not some precious territoriality but rather is the key to its success. You are being guided and taught by those who have in the past entertained exactly your misconceptions; they speak the language of science and have also experienced your struggles to understand how a necessarily different world works, and probably were seeking the same things from it.

So read the book, maybe also take the course; your interactions with the commercial world will be much more fruitful. Who knows, it may even be the first step in helping your ideas to change the world for the better.

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Introduction

Sometime after graduation you may enter a stage of life when you wish to become a manager in some type of company or area to do with Science, Technology, Engineering and Mathematics (STEM). This often throws up two problems; firstly, the management of scientists is quite different from the management of, for example, a factory or production line. Secondly, you are probably not trained in management economics or business concepts. You are probably more at home with micropipettes, netbeans, Vernier callipers and Markov chains, some of the more usual concepts in STEM areas. Nonetheless you are gradually becoming aware that you must understand how commercial life is, and how the world around you actually works. This may be complicated by any (or many) misconceptions you have around management and entrepreneurship, possibly gained from watching popular TV series that have not much to do with reality. You may think 'I have to find out about this'.

That was what happened to me: I left the University of Basel to become Director of R&D at a German chemical company; my approach was: why not swap my antibody for your DNA probe and together we can get a really good paper out, adding to the sum of human knowledge around 'organism X'. Needless to say this attitude had to change and I found myself doing a business qualification at the local university (Göttingen); it wasn't exactly an MBA but it had a very long name in German.

This was similar to the mindset of the first intake on the MSc minor field 'with Management Studies' around 2010 and led to my creating a bespoke module because, generally speaking, scientists wish to 'do good' and 'create progress' in a way that Business Schools often don't properly understand. Biomed people want to make better medicines, engineers want to build better bridges and computer scientists want better websites. Generally speaking, scientists don't know much about business and we care much more about improving the lot of fellow humans (and publishing a great article in a good journal along the way) than being rich. Therefore, I created a '10-day MBA' for all scientists at Kingston University, taught by an international team of experienced scientists with huge business experience that was specifically suited for relatively advanced science participants, normally at postgraduate level. The 'team' consists of experts from various disciplines from agronomy to zoology; there is a chemical engineer, a medical solicitor, econometrician, consultant, IT manager, patent lawyer, marketer, molecular biologist, an electrical engineer, etc. They have authored these chapters.

As I write there have been approaching 1,000 participants graduated on this minor field, majoring in all kinds of fields like aero-engineering, biomed,

pharmacy, construction, sport, geology and geography, computer science and information systems. Every year I am amazed by the vigour of the class, normally over 100 participants drawn from all corners of the world and participants regularly evaluate this as one of the top 10 courses. In class, we often discuss the drive towards 'progress'; for example, the late Nobel laureate Stephen Hawking often suggested that humans needed to get off planet Earth within 100 years, and find another planet to call home if our species is going to survive. Yet it is still quite beyond our engineering capacity to get even a small crew to the inhabitable moons of Jupiter or Saturn, and the biologists tell me there are even large uncertainties about how many green plants are needed to sustain each traveller. On the way there will constantly be problems, and all the subjects (project management, leadership, etc.) will be needed constantly during and after the journey. Sound, multidiscipline evidence-based management is need to achieve progress like this.

In this course (or book or module or whatever you want to call it) we start at the very beginning: What is money? We then progress through the theory of the firm, economics, strategy, governance, marketing, HR to patenting, etc. After that there are more specialisms and the engineers can look at some aspects, while, for example, the biologists may prefer other aspects. The management of knowledge workers – scientists – is a particular issue; as scientists we automatically think we belong to the new 'sunrise industries' and over-performing giants like Apple and Google spring to mind. Our research has shown that to achieve that you need to have employees at least as smart as the managers and that the managers have to trust their employees and merge with them. That is a tall order; but if that is not the case then a multilevel hierarchy will inevitably spring up, which may perform well in the short-term, but will not reach the superlative peaks of performance that others can achieve. This means that in building our organizations, just as much as in our science, we must always respect others and strive for excellence.

So finally, wherever you are coming from and wherever you are going, I wish you all the best and perhaps this volume can help you on your journey to success. Welcome to your world and good luck.

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