

© 2022 Russell Smith and the Doctoral School

Editor: Nicholas C. Vella

Layout: Gabriel Izzo, Marketing, Communications & Alumni Office

The photograph on the front cover is by James Moffett, Marketing, Communications & Alumni Office. The figures which accompany the text are © Samarkand Management Ltd.

No part of this book may be translated or reproduced in any form, by print, photo-print, microfilm or any other means, without written permission from the publisher.

ISBN: 978-9918-0-0272-6

Doctoral School Annual Lecture 2021

Everyone Runs a Business

Russell Smith

30 April 2021

delivered online,
University of Malta

Foreword

The Doctoral School's third annual symposium was held on 20 April 2021 to an audience of doctoral researchers and academics gathered remotely. The pandemic was still affecting the life of everybody, not least students and educators at schools and at universities worldwide. Institutions continued to adjust to sanitary measures and researchers responded as best they could to the challenges of curtailed international mobility and the effects of prolonged periods of intellectual as well as physical isolation and solitude. The anxieties caused by how to confront what was to come – deadlines, moving oral examinations online, requests to funding extensions – was of concern to many doctoral researchers. Many went on to complete their research successfully, even turning their experiences in reflexive accounts suitable for peer-reviewed publication, with an appeal for introducing the concept of 'research resilience' in projects at all levels.

'Research resilience' is not altogether a novel concept. Intrinsic to doctoral research is the ability of students to be persistent in undertaking research whilst being able to be flexible and quick to adapt to circumstances. Far-sighted supervisors make it a point to ensure that their students are explicitly aware that they are honing in on important skills throughout their research journey. It is these skills, over and above the disciplinary competences and expertise, that allow doctoral graduates to move with ease between jobs, enticing employers and making them valued members of any community.

For this year's annual lecture we asked Professor Russell Smith to share his vision on how doctoral researchers could capitalise on

another skill: the capacity of being able to sell one's know-how, acquired over years of dedication and commitment. True to its mission, the University of Malta supports research that is carried out for sheer joy and intellectual pleasure in all fields of human endeavour, fostering the creation and development of critical minds. It has also committed substantial resources to support those researchers who wish to go beyond and start a business. I invite you to read on to find out how.

Nicholas Vella

Director, Doctoral School

Doctoral School Annual Lecture Series

30 April 2021

Russell Smith (Centre for Entrepreneurship
and Business Incubation, University of Malta – MALTA)
Everyone Runs a Business

28 February 2020

Shosh Leshem (Kibbutzim Academic College of Education
and Oranim Academic College of Education – ISRAEL)
The Question of Doctorateness: Theory and Practice

1 March 2019

Ivan Callus (Department of English,
Faculty of Arts, University of Malta – MALTA)
The PhD, Tal-Qroqq and Campus Fiction

Everyone runs a Business

Obtaining a PhD is not easy. And neither should it be. It identifies the holder as having made a significant contribution, to a body of academic knowledge, all to the satisfaction of academic experts in the field. That takes years of dedicated study and experimental work. Towards the end of that period of intensive work, many doctoral students begin to question their future and suffer from the *Quo Vadis* syndrome. The choice often appears simple: either pursue an academic career or not. But this is the trap of the 'single pursuit' illusion ... the idea that only one option at a time is possible. A common view, although one that I now know to be false. Taking a PhD is not common. So why not be uncommon?

In this talk, Professor Smith argues that everyone in the world of work actually runs a business by selling their know-how. In other words, they are the business. All businesses sell just that one thing, know-how, either packaged as a product and/or a service. The doctoral student must step back and look at themselves from a new perspective. Will you sell your know-how to one customer and become an employee? Or will you sell it to multiple customers and become an employer? It is all a matter of assessing the *true risk and reward* from the commercialisation of your know-how, not the *conventional perception*.

Introduction

Good afternoon everyone. It is a great pleasure to speak with you all today. I must thank my good friend Professor Nicholas Vella for inviting me to give this keynote address to mark the Doctoral School's Annual Symposium. In thinking about my talk, I realised that I would be speaking not to students but rather to members of a club to which I belong. I just happen to be 40 years further along in my career and possibly the oldest member of the club present here today. And so, I decided to talk about what I have learned over the last 40 years that might help you all to avoid quandaries and find happiness in life. I agree that the pursuit of happiness is a right for everyone (remember 1776).

Going back to my days as an undergraduate in London, I recollect that my first commercialisation of know-how was teaching my Italian friend Nico how to tackle some assignments in medical physics. But he did not pay me cash. Instead, he taught me something of real value ... how to cook pasta. That certainly increased my happiness since I no longer relied on meals of beans on toast. But the benefit was much more profound – I found that girls like boys who can cook them dinner. Of course, at the time, I did not think in terms of know-how – we just swapped our knowledge to help each other. But I realise now that this was the start of my adventures in business and a lesson I never forgot.

Problem – Solutions – Benefits

I would now explain this using the **Problem – Solution – Benefits** model (that applies to all businesses) as follows:

Problem

- I could not cook
- My friend Nico struggled with medical physics

Solution

- I taught Nico about medical physics
- He taught me how to cook pasta

Benefits

- Nico was able to pass the medical physics module
- I stopped eating only beans on toast
- I discovered that my new know-how could be employed in cooking dinner for girls

This was a two-way exchange of know-how in which both of us solved the problem of the other in a manner that gave us both benefits. It involved an exchange of know-how between the two of us but with no monetary payment. However, most business activities involve the purchase of a solution for money. And that takes me to my next step into the world of business.

Starting to sell know-how

As a PhD student attached to the military, I wanted to find extra cash. At university I had been the editor of the college magazine. This was well before the days of desktop publishing when everything had to be done more with art than science. I guess it would be called graphic art. When Nigel, a friend from college, started up a business printing T-shirts he remembered my ability in graphic art and asked me to design the artwork for T-shirts to be sold as merchandise on a European tour planned by a major band. I was paid £10 and was quite happy with the fee. In those days I had no idea about Intellectual Property and that the copyright for the design belonged to me – he had just paid me for the service and not to acquire the copyright. That was in 1979. Just for fun I searched the internet the other day and found that the T-shirts are still being sold using my design. Obviously, in 2021, I do not get any ongoing royalty payments but I do have bragging rights as the band was famous ...

Ownership of intellectual property

Now this issue of IP is an important one. Whenever I sell a service to a customer these days I always ensure that the IP is owned by me although the customer has the right to purchase it separately. However, if you decide to become an employee then, in law, whatever IP you create belongs not to you but to the employer. Hence academics employed at universities, including our own here

in Malta, do not own the commercial opportunities that may arise from their research. Those opportunities belong to the university as the employer. It is unlikely, however, that the university could ever commercialise research outcomes without the participation of the 'inventor' and so, in recent years, the world of Technology Transfer has arisen. At our own university, this is handled by the Knowledge Transfer Office (KTO) who serve to work with both the employee and the employer to arrange a fair way of sharing financial return from the commercialisation of IP. Please note that you can only sell what you own ... including IP.

The employee/employer relationship is more complicated than most people realise, especially if the employee undertakes research. However, the employee still runs a business since they sell know-how to the employer. It is just that they sub-contract the business requirements of keeping accounting records and the payment of tax to the employer on their behalf. This is covered by the Contract of Employment. Now employees are lucky in that they have the only customers (employers) who state what they want and how much they will be prepared to pay. And they usually make that public. This is the Job Advert. But employees are unlucky in that they do not own the IP that arises from their research – as stated, that belongs to the employer.

Publish or patent?

Not all academic research will lead to commercial opportunity. It is self-evident that a potential new cure for cancer would have commercial potential. Less likely might be research into Icelandic Saga poetry. I would fight to the death for the right for academics to do research into whatever their field might be as knowledge in any area creates benefits for society, irrespective of commercial return. And we have a duty to provide students with courses based upon current research findings wherever they arise from. That means publishing academic papers. Unfortunately, publishing an academic paper stops the possibility of any patent being granted since the information will have been put into the public domain. All academics should therefore discuss with KTO whether IP issues require a delay in publication until a decision has been made over the potential commercial value of any discoveries. That does not just apply to patents – certain know-how may have value that can be generated from consulting fees. Now the KTO office is opposite my own at the Centre for Entrepreneurship and Business Incubation (CEBI). Do I see a queue of academics lining up to seek advice from KTO every day? The answer is no. All academics strive to publish as many papers as possible since their careers depend on that. But this mismatch, in my view, needs to be addressed with better communication and understanding. We do not want to stop researchers from doing what they are good at but we need to remember that generating some form of revenue can always help further research.

Is business risky?

What I have learned then, is that businesses only sell one thing (know-how) packaged as either a product and/or a service. And that employees are still businesses that sell know-how (usually as a service, not a product) but with just one customer – the employer. Many people tell me that they prefer employment because of the security it offers. Seriously? Is being made redundant with perhaps only a notice period of one month really secure? The advent of the COVID-19 pandemic has made a great many people, sadly, realise just how precarious employment can be. What I have also learned, is that it is not having a job that is the problem. It is having only one job (i.e., only one customer). That is ‘putting all of your eggs in one basket’, as the saying goes. Or like putting all of your money on red at the roulette table.

Your PhD has given you more than you think

I am not a gambler. But if I were, I would spread my bets across multiple opportunities. So, for me, the starting point is surely to have more than one job? Now this brings me back to my own PhD in neurophysiology. Working with the RAF, my area of interest was reflex eye movements that occur as a result of movements of the head. A big issue for fast-jet pilots trying to read cockpit instruments or worse, helmet-mounted displays. Whilst my research certainly increased my know-how about vestibulo-ocular reflexes, that was not the know-how that I sold in my first company. Rather, it was

other skills that I learned whilst undertaking my PhD. Firstly, I had to learn to programme computers to analyse eye-movement recordings. Secondly, I had to learn enough about electronics and analogue to digital signals so as to connect human subjects to computers and record eye movements and head motion. Thirdly, I had to learn much more about statistics in order to analyse data and draw meaningful conclusions. The know-how I learned during the PhD allowed me to offer products and services in three areas with my first company:

1. Writing computer programmes for complex systems such as nuclear reactor control
2. Environmental monitoring with computers on board ships transporting animals
3. Pharmaceutical shelf-life determination with software using Arrhenius equations

Oh, and a fourth one, reversing analogue to digital technology allowed me to design and work on digital synthesisers in the early 1980s which took me into music studios with one of my keyboard heroes, Rick Wakeman. Rather sadly, I still have my drum kit from those days that for some reason Mr Wakeman never asked me to play on any of his records. I now realise that was due to my lack of musical talent and not a failure of the PhD process. It has taken me forty years to admit that though. But without my PhD training, how would I ever have been in a music studio with a famous artist?

The real value of a PhD

My point here is that I could have done none of those things without undertaking my PhD with the RAF and London University. Yes, my PhD was from the Faculty of Medicine. But the know-how I commercialised had nothing to do with my medical knowledge. But it wasn't just the technical know-how that I had learned during my PhD. The ability to be self-disciplined and carry out a piece of work on time was really important. So too was an ability to assess data and to draw meaningful conclusions upon which decisions could be made with confidence. And the ability to articulate ideas and proposals to customers was really no different from presenting results about PhD work to my Commanding Officer or at the subsequent *viva*. In short, the PhD allowed me to enter the world of business and to have a varied and interesting career. Not at all what I expected when I started it. And yet, here I am at the age of 64 and I can still be an academic. In other words, the PhD in my opinion is one of the best training programmes that anyone can undertake. Make the most of yours.

As mentioned, it was during my undergraduate days that I offered a solution to problems that friends had, using my know-how. Nico struggled with medical physics. Nigel could not do the drawings for his T-shirt designs. And here lies a lesson that underpins our Master in Entrepreneurship programme. Do not look to sell products and services. Look to find problems that people have and sell them the

solution. And it helps enormously if you get to know the customers and understand exactly what their problem is. Right around the world half of all new businesses fail within five years. Most do so because they are trying to sell things that people do not really want. I now understand this approach as market research. Well, that is a business school term. I just think of it as being interested in people and solving their dis-ease ... whatever the problem is. Maybe the medical side helps more than I realise?

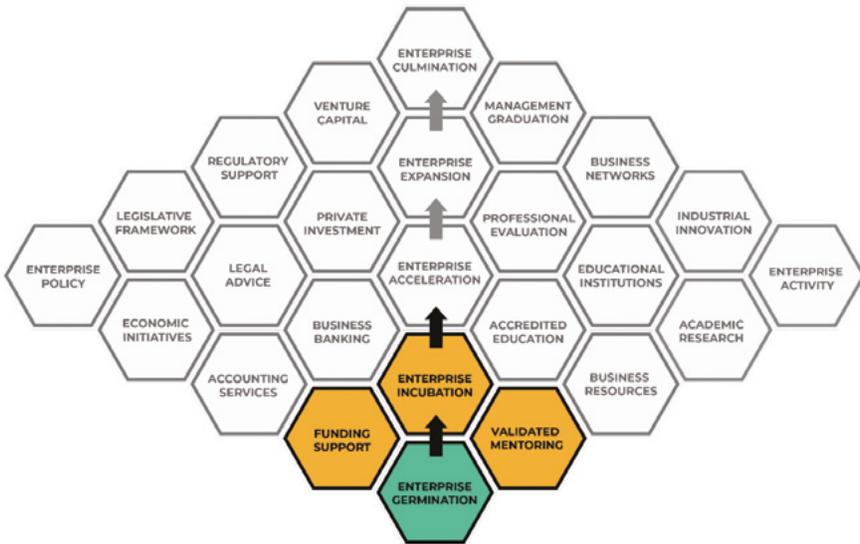
What do you want to do?

My advice is to do an audit of yourself now, before you finish your PhD. What know-how do you have and how could it be used to create solutions for problems that customers might have? What interests you enough to spend time in an area? Can you be selfish and work in your own aspirations as part of your working life? For me, working for the pharmaceutical industry allowed me to travel to over 50 countries, including a lot of time in Japan. That was very important for me since I started martial arts training at the age of five and wanted to spend time there. Everybody has to put bread on the table and to pay the rent. But can you also allocate time to do something for which you are happy to take no payment? For me, in the last 20 years, that has involved helping disadvantaged people to start their own business as a route out of hardship. For example, we work with the Royal Marine Commandos who retire for medical reasons. That is a delicate term; many of them have lost one, two or even three limbs down to improvised explosive devices (IEDs). They

can no longer be Commandos but they can never stop being one either – it is a state of mind. Their ability to work in teams, undertake planning, handle logistics and not quit when things get tough make them the best group of ‘students’ I have ever had the privilege to teach about starting a business. What group might you be motivated to help? Trust me, you will get back more than you ever give.

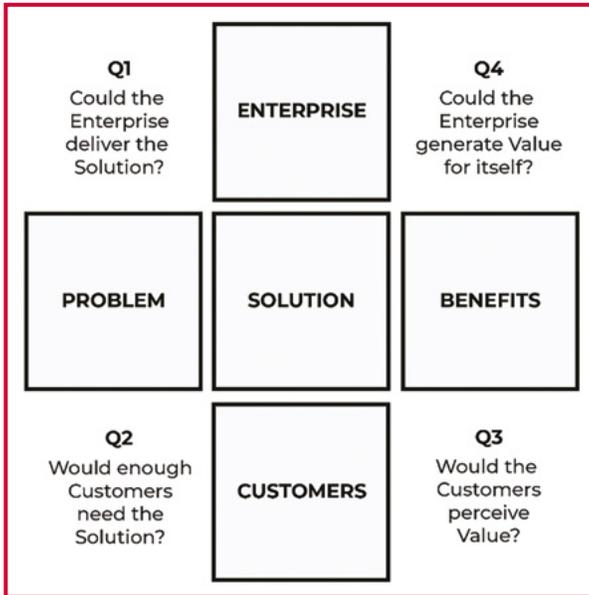
Where to start?

Easy. Come to our TAKEOFF Business Incubator and discuss any business idea that you may have with its Manager, Ing. Joseph Bartolo or myself. The service is free to anyone in Malta but students get a lot more besides. We call this Business Germination, the stage before Business Incubation.



The figure on the previous page illustrates the **Incumatrix™** Environment Framework that we use at TAKEOFF. The model has 25 Factors but we are only concerned with four of those at this earliest stage. Prior to moving up the central Progress Pathway to Enterprise Incubation, you will receive access to Validated Mentoring together with the potential for Funding Support from one of the several Government schemes that we benefit from.

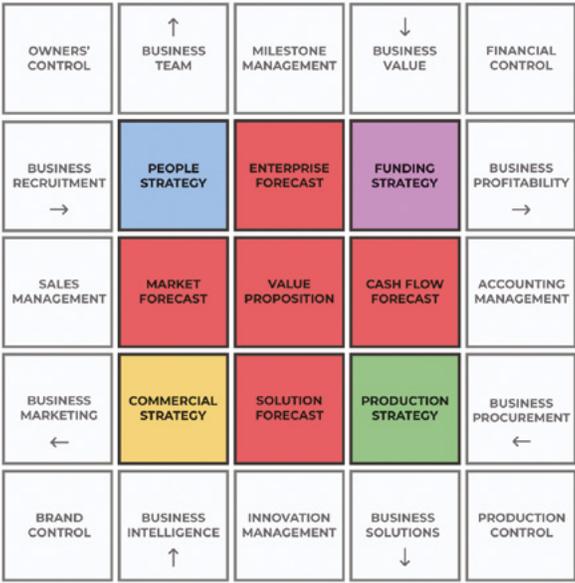
If possible, it is best to collect your thoughts using the Concept Plan shown in the next illustration. This format allows you to define your idea using the Problem - Solution - Benefits model as described previously. The Concept Plan places Enterprise above the Solution - this is the business that you may consider starting. Underneath Solutions sits the potential Customers that you have identified. The Concept Plan is very useful since it throws up four pivotal questions at the corners of the model and that is where your mentoring session will start.



Your idea will be gently probed using five questions for each of the nine cells with particular reference to the four key questions. We rate your answers using the Standard Scoring System shown below and then help you to address any deficiencies in your business idea.

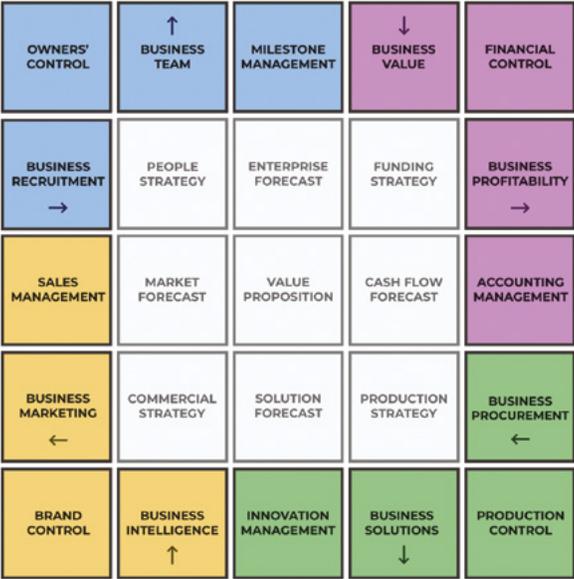
0	1	2	3	4
MISSING	INCOMPLETE	BORDERLINE	ACCEPTABLE	PROVEN
"Action required"	"Not yet ready"	"More work required"	"Proceed with care"	"Go for it!"
Unacceptable risk	Significant risk	Avoidable risk	Minor risk	Lowest risk
Factor must be addressed before progressing	Factor requires substantial improvement	Factor requires some improvement to reduce risk	Factor not fully optimised and some minor risk remains	Factor optimised for performance with low identifiable risk

Most people who come to TAKEOFF are shocked about the number of 'holes' in their thinking but that is not an issue for us – our job as validated mentors is to help you work through those. The next step is to begin to build a model of your business using the **Incumatrix™** Enterprise Framework as shown in the following illustration.



This process starts with creating the four forecasts relating to Solutions (your intended products and/or services), the Market (your customers), the Enterprise (your business) and the Cash Flow (including start-up funding estimates). We then guide you to move from what you would like to do towards how you will actually do it (the strategies). If all of these suggest that you should be able to create a profitable and sustainable business (your Value

Proposition), then we move to the next step and create a Launch Plan as shown below.



The Launch Plan introduces Factors of Management and Control together with the various Business Inputs and Outputs. It surrounds the previous nine Factors that we call the Value Plan. We do not encourage anyone to launch their business until each of the Factors have been considered carefully and an appropriate plan has been put into place. Taking this approach, we can reduce the risk inherent in any new business venture, which is our main aim. Once these steps have been complete, the Founder then has to take the decision as to whether to launch the new business or not.



The full **Incumatrix™** Enterprise Framework is colour-coded, such that:

Red = Planning,

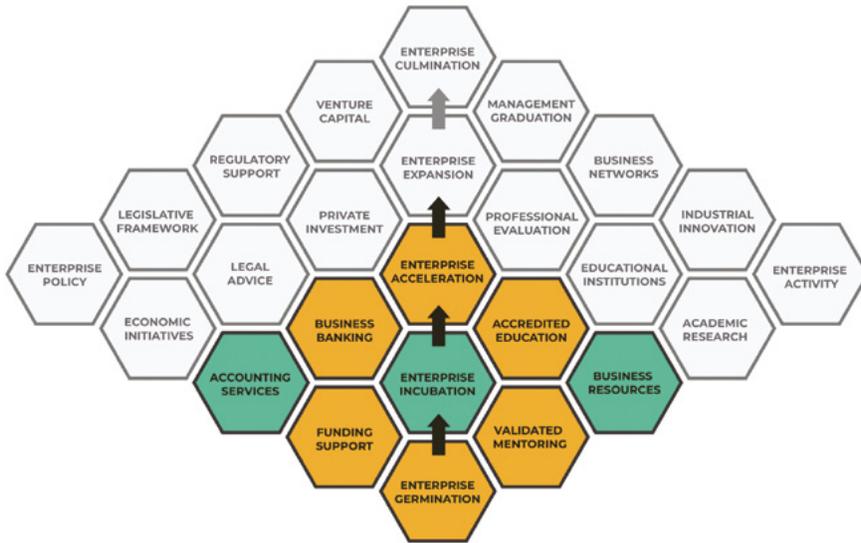
Green = Making,

Yellow = Selling,

Blue = Managing, and

Purple = Funding.

If the decision is made to launch the business then we move to Enterprise Incubation (see the illustration that follows).



It is likely that a new business Founder will apply for Funding Support such as a grant from Malta Enterprise with whom we work closely. But every business will also need Accounting Services as well as Business Banking as shown above.

We provide Accredited Education to support Founders including over 50 training videos available from the TAKEOFF website. We can also help you to identify and locate the Business Resources that you need from the Maltese business Environment. If you wish to grow your business then we move you into the Enterprise Acceleration phase which includes a lot more components. However, it is not necessary to go into that for the purpose of this talk.

In conclusion, it seems to me that you are fortunate at this university to have the support of CEBI and TAKEOFF should you wish to consider a business venture of your own. The services are all free and based upon working with over 8,000 people just like you from 36 countries. In other words, everything is evidence-based.

My final words must be to thank you for your attention and to wish you the best of luck with your viva. Remember, nobody will know as much about what you did for your PhD as you do!



**Prof. Russell Smith
MD PhD**

*Centre for Entrepreneurship
and Business Incubation*

Professor Russell Smith MD PhD began his career in business by starting a software company, whilst still studying for his PhD in the 1980s. Products from that company sold in 27 countries. In 1985 he joined the pharmaceutical industry, running international drug-development programmes in North America, Europe and Japan finally leading a team of more than 100 staff. For the last twenty years, Russell has specialised in the commercialisation of intellectual property arising from academic research and the teaching and development of student entrepreneurship resulting in the development of the Incumatrix™ system of entrepreneurship. In 2012 Her Majesty, The Queen bestowed upon him the Queen's Award for Enterprise Promotion. A year later, Russell was invited to teach at the newly set up Centre for Entrepreneurship and Business Incubation (CEBI) at the University of Malta as part of an ESF project aimed to provide a Masters course on entrepreneurship. He joined the University of Malta after that, and now heads CEBI.



L-Università ta' Malta
Doctoral School

Doctoral School
University of Malta
Msida MSD 2080

 um.edu.mt/doctorschool
 (+356) 2340 3608/3254/4408
 doctorschool@um.edu.mt
 /umdocschool

