

Creating Successful Spin-out Companies

The Management and Board Perspective

Kissing Frogs and Drowning Puppies

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My Background

- Successful Entrepreneur (Imperial spin out)
 - Queensgate Instruments
- Active Angel Investor focus on University spin-outs
 - Infinitesima – high speed AFM for semicon inspection
 - C2V-microGC for environmental monitoring
 - Nexeon – next generation Li-ion batteries
 - Midaz – high power UV lasers
 - Executive Chairman
- Seed Capital Funds
 - SPV (London Business School)
 - Previously SULIS UCF
- Imperial Innovations (Non Exec Director)
 - Raised >£50M from AIM float

Technology is Disruptive

- Destabilising existing business models
 - Steam
 - Railways
 - Electricity
 - Internal combustion engine
 - Telecoms
 - Internet
 - Nanotechnology
- Schumpeter – ‘Gales of Creative Destruction’

Lessons from History

- All innovation is disruptive to some extent
 - New rules – new games
 - Technology changes the rules
 - Changes the game in unexpected ways
 - Unexpected winners and losers
- But - Markets that do not exist cannot be analysed
 - New markets – no maps
- Markets and applications are often unknown and **unknowable**
 - beware analysts reports – they don't have a crystal ball – remember the telecom boom??

Timing

- Technology takes a **long** time to commercialise
 - printing press, steam, car,
- Needs other subsidiary inventions
 - Inks, metallurgy, scripts, paper, presses
 - Tyres, roads, fuels
- Generate new demands
 - Railways and telegraphy
- Incremental and slow process
 - But getting faster

The 'Best' does NOT always win

- Qwerty keyboard
 - 1873 – anti-engineering – jamming keys
 - 1882 – Ms Longley, Frank McGurrian
- VHS vs Betamax
 - Tape length vs Quality
 - Usage for taping movies rather than camcorder
- other factors for success—
 - Lifestyles, branding, fashion, environment, distribution, social value, prestige
 - Why did IPOD succeed?
 - Is Windows better than Mac ?

Success often comes from unexpected directions

- Very often the application of a technology is a long way from the original idea
- Phonograph – Edison 1877
- Intel – DRAM memory.
 - From a Japanese calculator chip to the IBM PC.
- He-Ne laser – bar code scanners
- Commercialisation is essentially an **adaptive** process
- Technology is a basket of options on the future
- ‘you have to kiss a lot of frogs to find a prince’

Ideas are cheap.....

- Inert
- Numerous
- Cheap
- Go mostly unexploited
- An Idea is NOT an Opportunity
- The problem of the 'Inventor' :
 - Implementation is the **difficult** part
 - Genius is 1% inspiration 99% perspiration
- Execution :
 - Team, Resources, Talent and skill, Experience

The Problem with the Business Plan

- The world keeps changing
 - tsunamis, terrorism, climate change, energy shortages, governments
- The need for complementary assets
 - The things you did not know you needed
- Unexpected problems
- And Unexpected opportunities
 - If you have the wit to recognise them.....

The Importance of Incubation

“the best laid plans of mice and men....”

- Technology start-ups – new business models
 - 1st movers – pioneers
 - face down in the dirt with arrows in your back.....
 - 2nd movers – big established, adjacent firms
 - Move in once you have validated the market opportunity
- Developing the business model is a creative, adaptive process
- Unusual success means doing unusual things – there is nobody to copy !!!
- Developing sustainable competitive advantage is very difficult

management

management

management!!!

- The Founders are rarely managers
- Changing situations require flexible managers
- CEO needs market knowledge
 - Customer access, trends, what deals are possible
- Chairman needs industry background
 - Networks, people
- Experience leads to fewer mistakes
 - Most start ups fail because of avoidable mistakes.
 - Fail cheaply – if you can - knowing when to stop
- Good managers can tell which frogs are worth kissing.....and which puppies need to be drowned

The Chairman

- **Manages**
 - Investors – expectations, approvals
 - The CEO – hiring, firing, developing strategy
 - The Founders – egos, science vs technology
 - fund raising – sources, terms, timing
 - the evolution of the business – new people, new skills, changing roles
 - Exit – timing, process, outcomes, consequences

The Board

- CEO – operations, customers, cash
- Finance Director – initially a part time role
book-keeper/company secretary.
- Non Execs – add specific sector expertise
 - networks, industry knowledge
- Founders – only one allowed on Board
 - Form Scientific Advisory Board
- Investors – usually in gate keeping role

Building a Management Team

the importance of experience

- CEO – understands technology, has done spin-out before
- CTO – probably one of the Founders
 - But he will need training
 - Senior academic will be part time Chief Scientist
- Sales/Marketing
 - Used to work for your key customer, or competitor
- Operations – scaled up before
- If you can attract a good team – then you probably have a good company!!

Managing a growing business

- Building an organisation
 - Reporting lines, responsibilities, authority
- Sales and Marketing
 - Distribution, pricing
- Finance
 - Cash flow, management accounts, audited accounts, budgets
- Manufacturing
 - Planning, process engineering, training,
- R&D
- Quality
- But success brings new challenges
 - jobs outgrow people

What you call the technology does not matter – the issues are always the same

- People – experienced management team
- Good Product and strong IP
- Good Customers – who where etc
- Market size and growth
- Scale up issues
- You still have to kiss a lot of frogs....

Because

- The world is changing rapidly
- Being best is insufficient
- Kissing frogs is hard
- You may not recognise a Prince when you find one
- Hiring good people is hard
- Making things is hard
- Selling is hard
- The skill set for business does not overlap much with that for doing good science
- You don't appreciate how much you don't understand

An experienced management team is crucial
for success

Thank you

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"I couldn't possibly kiss you. I just don't find you attractive."