Clare Creativity Conference

The Act of Creation

Clare College, Cambridge
5th and 6th September 2006

Orchestrated by
The Silver Bullet Machine Manufacturing Company Limited

On 5th and 6th September 2006, in the magnificent surroundings of Clare College, Cambridge, a highly diverse, enthusiastic and talented group of people gathered together to attend a conference entitled

The Act of Creation

This document captures the key conference findings.

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Contents

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Delegate list

Adam Middleton	GE Energy	Strategic Marketing Manager
Dr Adrian Travis	Cambridge Flat Panel Displays	Research Director
Dr Allègre Hadida	Judge Business School	University Lecturer in Strategy
Andy Hills	Geo Adams and Sons	Executive Director, Cooked Meats
Andy Morrison	BOC	Global Director, New Business Development
Dr Anna Dempster	Birkbeck College	Lecturer in Management
Antony Aitken	Transition Partnerships	Partner
Charlie Coode	GE Money, Czech and Slovak Republics	Chief Executive Officer
Claire Ellis	The Millenium Mathematics Project	Enigma Schools Project Officer
Colin Johnston	Siemens Power Transmission and Distribution	Account Manager - National Grid
Dr Danny Hann	RWE npower	Head of Strategic Planning Management
Daryl Dunbar	BT	Director, C21 Portfolio Development
David Karlin	Sage UK	Divisonal Director
David Osborne	Elexon	Market Support Services Manager
Fred Grindrod	The Commission for Racial Equality	Senior Policy Advisor, Policy and Public Sector Directorate
Gary Carter	FremantleMedia	Chief Creative Officer
James McQuade	European Court of Auditors	Assistant to the General Sectretary
Jane Rhodes	Sno!Zone	General Manager, Braehead
Dr Jill Rutherford	ACS International Schools	Non-Executive Director and IB Consultant

Jim McCartney	The Department for Work and Pensions	Pensions Group Learning and Development
Joy Edgington	The Department for Work and Pensions	HR Policy and Programmes Team
Dr Li Du	GlaxoSmithKline	Head of System Architecture and Engineering
Margaret Demian	NHS Institute for Innovation and Improvement	Head of Knowledge Management
Dr Meredith Belbin	Belbin Associates	Founder and Managing Director
Mike Wheatley	BBC	Head of Technology
Nick Humby	Manchester United	Group Finance Director
Patricia Lee		
Phil Fearnley	i-Rights	Director
Richard Citron	BDO	Partner
Rob Wheatley	Vodafone	Senior Technical Manager, Future Products
Sally Woodward	Sherwood PSF Consulting	Partner
Samantha Mitchell	World Vision	Marketing Manager - Product Development
Stephen Pegge	Lloyds TSB	Head of External Affairs, Business Banking
Sue Randles	Geo Adams & Sons	Innovations Manager
Tim Bellis	Judge Business School	Director of Executive Education
Tony Cohen	FremantleMedia	Chief Executive Officer
Tony Reiss	Sherwood PSF Consulting	Partner
Trevor Sandford	Sandford Enterprises	Managing Director

The Silver Bullet Team

Andreas Kaempf

Anny Sherwood

Dennis Sherwood

Rob Eastaway

Torben Sherwood

Torsten Sherwood

Conference faculty

PY Gerbeau...

...became a national figure when, in the early weeks of 2000, he was invited by the Government to take over the management of the Millennium Dome - a job he did with truly Gallic flair and panache. PY is not only one of today's management gurus, but also a renowned sportsman, having been Captain of the French ice hockey team in the Calgary Winter Olympics in 1988. So, appropriately enough, PY's current role is as MD of X-Leisure, whose assets include the indoor natural ski slopes in Milton Keynes, Castleford and Braehead.

Dr Tony Lee...

... moved from the Department of Physics at Cambridge to Unilever, where he rose to become Head of Corporate Research, in which role he was responsible (amongst many other things) for establishing a research facility in Shanghai (the first western joint-venture with the Chinese Academy of Sciences), as well as being instrumental in setting up the Unilever Institute for Molecular Sciences and Informatics in Cambridge. Since retiring, Tony has been a director of Natural Resources International, and has worked as a deck-hand on a square-rigged barque in the South Pacific. He has never played ice-hockey, and as a true Brit, is more noted for stoical pragmatism than Gallic charm!

Alex Oliver...

...is a Reader in Philosophy at Cambridge, a Fellow of Gonville and Caius, and a co-director of the *Forum for Philosophy in Business*, which tackles key philosophical questions of practical life such as trust, and intellectual property.

Alison Bott...

...is currently global co-Chief Operating Officer for HR management at Goldman Sachs, based in London. Previously, Alison has run her own business, and has been a management consultant with Coopers & Lybrand.

Dennis Sherwood...

...is Managing Director of *Silver Bullet*, and one of the country's leading experts on creativity and innovation. He was for 12 years a consulting partner with Deloitte Haskins and Sells, and Coopers & Lybrand, and subsequently an Executive Director at Goldman Sachs and Managing Director in the UK of SRI Consulting. Dennis is the author of nine books, including *Smart Things to Know about Innovation and Creativity*, and *Seeing the Forest for the Trees – A manager's guide to applying systems thinking*.

Dinah Casson...

...is one of Britain's top designers, and co-founder of Casson Mann, the innovative consultancy that has transformed the staid world of museums and galleries with its fresh, creative approach to design. Recent projects include the Churchill Museum at the Cabinet War Rooms, the Portrait Miniatures Gallery at the Victoria and Albert Museum, and three of the four new Time Galleries at the Greenwich Royal Observatory.

Nigel Weiss FRS...

...is Emeritus Professor of Mathematical Astrophysics at Cambridge, a Fellow of Clare, and a former President of the Royal Astronomical Society. Nigel's research interests are in solar and stellar magnetic fields, astrophysical fluid dynamics, and nonlinear dynamics.

Professor Robert Glen...

...has since 1999 been Unilever Professor of Molecular Sciences Informatics at Cambridge University's Department of Chemistry. Robert firstly worked at ICI and Wellcome, and then set up his own biotech consulting business. Robert is an expert in pharmaceutical research, development and marketing, as well as in entrepreneurial start-ups. He is the co-inventor of AstraZeneca's anti-migraine drug, *Zomig*.

Roger Leech...

…is the Operations Director for Unilever Corporate Research, with responsibilities for employees, communications, budgets, facilities, and IT. He joined Unilever in 1976 as a microbiologist, since when he has been involved in a number of areas that have included working as the personal assistant to the Unilever Research Director, and working in an application unit sharing data and expertise with business units around the world. Roger's driving interest is the harnessing and delivery of new technology.

Conference programme

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The Act of Creation

Programme for Tuesday 5th September

The centre-piece of this day's activity was *THE BIG DEBATE*

This House believes that small organisations are inherently more innovative than large ones

from 12:30	Registration	Godwin Room
1:00 – 2:00	Lunch	Great Hall
2:30	Welcome	Latimer Room
3:00	*THE BIG DEBATE* - Main speeches	Latimer Room
4:30	Afternoon tea	Great Hall
4:50	*THE BIG DEBATE* - Speeches from the floor and final vote	Latimer Room
5:45	Close of day 1	
7:00	Drinks reception	Scholars' Garden
7:30	Dinner	Great Hall

The Act of Creation

Programme for Wednesday 6th September

This day commenced with three thought-provoking lectures, examining creativity from three viewpoints: the philosophical, the scientific and the artistic. This provided a context for the syndicate discussion groups, the findings of which were shared and discussed in the afternoon. The event concluded with a plenary exploration on one of the key issues facing all organisations with an interest in innovation: how to build a true culture of innovation, whereby innovation is a natural part of the day-job, rather than something that happens, almost by accident, and in spite of the organisation.

8:00 – 8:45	**Breakfast**	**Buttery**
9:00	**Introduction to day 2**	**Latimer Room**
9:15	**The Act of Creation : the philosophical, scientific and artistic perspectives, from Alex Oliver, Nigel Weiss and Dinah Casson**	**Latimer Room**
11:00	**Morning coffee**	**Great Hall**
11:15	**Syndicate discussons**	**Various**
1:00	**Lunch**	**Great Hall**
2:00	**Syndicate share**	**Latimer Room**
3:30	**Afternoon tea**	**Great Hall**
3:45	**Building an innovative culture - Dennis Sherwood**	**Latimer Room**
4:45	**Concluding remarks**	**Latimer Room**
5:00	**Close**	

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THE BIG DEBATE

This House believes that small organisations are inherently more innovative than large ones

The debate was chaired by
Dennis Sherwood
Managing Director, Silver Bullet

The motion was proposed by
PY Gerbeau
Chief Executive Officer, X-Leisure

The motion was opposed by
Dr Tony Lee
Former Head of Corporate Research, Unilever PLC

This House believes that small organisations are inherently more innovative than large ones

The debate was conducted as follows:

Following an introduction to the debate by the Chairman, Dennis Sherwood, all delegates were asked to participate in an opening vote, as to whether they initially agreed with the proposition (aye), or disagreed (no).

PY Gerbeau then proposed the motion in a speech lasting approximately 30 minutes; Dr Tony Lee replied in opposition, in a speech of similar duration.

On completion of the speech for the opposition, PY Gerbeau had the right of reply for some 10 minutes; Dr Tony Lee then had 10 minutes to reply in turn.

There was then a break for 20 minutes for afternoon tea and informal discussions.

Over the following hour, Chairman Sherwood invited speeches from the floor, after which delegates were asked to cast their closing votes.

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The proposition...

PY opened the debate by stating the definition of 'innovation' that he would be using:

"Finding new ways to connect with the consumer through innovation in products and services; how to challenge established business models to reinvent new ones to exploit new ideas and technologies profitably."

Where, then, does innovation come from? And how does it happen? To PY...

"Communication and culture are absolutely key: innovation comes from cross-fertilisation within organisations, and small organisations have far fewer internal boundaries. Furthermore, in a small organisation it is much easier for a leader to create a culture of innovation than in a large one."

Developing the theme of communication, PY continued by emphasising that...

"Very often, innovation comes from being close to the consumer: small companies talk to the consumer; large companies talk about the consumer. And you have to be close to the employee too - another thing large companies find very difficult to do."

PY conceded that there were two areas where large companies have the advantage over small ones - their access to resources in general, and to capital in particular. These are important advantages, since resources make things happen, and capital provides the funds for activity. So, in principle, it appears as if large organisations *should* be inherently more innovative than large ones. But, concluded PY, as organisations become larger, some key problems kick in - the prevalence of internal boundaries, the inability to communicate well and quickly, sluggishness in making decisions and deploying resources, increasing distance from employees and consumers. Collectively, these disbenefits tip the balance: small organisations are indeed inherently more innovative than large ones.

...and the opposition

"Let's get some facts. Each year, Business Week publishes a list of the most innovative organisations on the planet - organisations such as Apple, Toyota, GE. Organisations which are famous for their innovation. And organisations which no-one could ever describe as 'small'. "

Dr Lee agreed that PY had correctly identified the key problems large companies have to solve to continue to be innovative - how to communicate internally and externally, how to build and maintain a vibrant culture. And he recognised that of course not all large companies do this successfully. But, continued Dr Lee, many do. That's why, for example, GE - which was founded to exploit Thomas Edison's inventions - has been in the *Fortune 500*, year on year, for more than a century.

"If we accept PY's thesis, how do we account for growth? Yes, Apple was a small company once, when Jobs and Wozniak started working together in 1976. Presumably, according to PY, as Apple grew, there must have come a point at which the company became less innovative. But this has clearly not happened. Certainly, as with all companies, Apple has had its ups and downs. But it has maintained not only it's reputation for, but also the reality of, stunning innovation, from the Apple I to the iPod."

Dr Lee pointed out that Apple, of course, is not the only example of how innovative, young, small companies have successfully become innovative, established, large companies - Intel and Microsoft are two more. Most importantly, continued Dr Lee, it is the market that decides the scale characteristics of those who are successful. So, in markets such as aero-engines, commercial pressures have consolidated the industry to three players - GE, Rolls Royce and Pratt & Whitney. The market demands that these companies are large. But they must also be innovative too - otherwise they will go out of business.

"The usual thing that happens to small companies who are innovative is that they go out of business. The few that survive are those that have fantastic clarity as to what the market needs."

Small organisations that have flourished, concluded Dr Lee, are not those who are inherently innovative, but those who have been lucky. The motion should therefore be opposed.

Selected extracts from the speeches from the floor...

"There's a saying that 'God made the world in seven days - but he didn't have an installed base'. The biggest problem that large established organisations have, and that small new ones don't, is the burden of the legacy they carry from the past. This is an enormous inhibitor of innovation."
David Karlin, Sage

"Recently, I have been representing Siemens on some joint product development with an innovative small company. This was an illuminating experience for both organisations, and the message I draw is that small companies are not inherently more innovative than large ones - it's more about the climate in the large organisation to allow innovation to take place. If that climate is right, then for the medium and long tem, the lasting innovation will come from the larger companies."
Colin Johnston, Siemens Power Transmission and Distribution

"As an organisation grows, there is an increasing tendency for it to become progressively pre-occupied with internal matters, rather than external ones, or those on the boundary between the organisation and the outside world. This is rather like what happens as a sphere gets larger: the internal volume increases much faster than the surface area. The trick with organisational growth is therefore to ensure that its 'surface area' grows at least as fast as its 'volume' - so it's not the *size* of the organisation that matters so much as its *shape*, so that the organisation keeps its 'tentacles' in close contact with its environment."
Trevor Sandford, Sandford Enterprises

Note: although these remarks have been presented using quotation marks, they are not *verbatim* quotations – rather, they are paraphrases of what we believe to be each speaker's intent. We trust we have not misrepresented anyone!

"The CEO of GE spends a lot of time working out how we can behave like a small company - how we can leverage our size, but act 'small'. My own business in the Czech Republic is a good example of this policy. With fewer than 1,000 employees, and full P&L responsibility and autonomy, we are a small business, but I can benefit from ideas generated and developed in sister companies around the world, as they can benefit from those we develop."

Charlie Coode, GE Money

"It's all a matter of organisation. Hierarchical organisations are only as intelligent as the individual at the top. But social organisations - of which the most vivid examples are insect colonies such as those of ants or honey bees - are vastly more intelligent than any individual. Small organisations usually start as an 'effective hierarchy', in which the original entrepreneur knows, and communicates with, everybody, and this can be very successful. Then, as the organisation grows, people can lose contact with one another, communication can become top-down, and morale can fall. The organisation is still a hierarchy, but it is in decay. The ideal is to evolve into a 'dynamic system' in which teams and groups work together effectively in a coherent way in locally managed networks, rather like an insect colony, whilst still allowing room for the individuality and creativity of the human being. If we get the rules of the organisation right, the culture will follow, and then we'll be moving in the right direction."

Dr Meredith Belbin, Belbin Associates

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...and some more...

"One of the important things that often gets lost in a large organisation is immediacy of feedback - if there's one thing that people who create require all the time, it's constant, almost tactile, feedback on what they're doing, as they're doing it. This places extraordinary strains on the individual and the organisation. It's probably true that people who work in small organisations experience them as more creative, but it's also probably true they won't have the muscle to innovate all that they create - that's why small companies so often have to sell to big ones to make something actually happen. To me, there is nothing inherent in small organisations *per se* that makes them more creative, it's inherent in *how people communicate* in small organisations. What we need to do is to gain a deeper understanding of the process, and then remove all the 'noise' from the large organisational machine."
Gary Carter, FremantleMedia

"Much of the discussion had been about companies. But what about other forms of organisation? In schools, for example, larger schools are inevitably less innovative than smaller ones because there are more students to control. From my perspective, what I see is that the bigger the organisation, the more rules there are, and the more constraining it is."
Claire Ellis, The Millennium Maths Project

"What is innovation? To me, a blend of creativity, environment, execution and leadership - and let me add time, speed, planning and feedback. At the end of the day, an innovative organisation is one that not only has great ideas, but delivers too."
Adam Middleton, GE Energy

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…and some more!

"Once a small business has been established, does it need to be innovative to survive? In some markets, no; but if a small business is in a highly competitive market - especially a market populated by large businesses too - or if a small business is a supplier to an innovation-hungry large business, then those small businesses that survive must find niches that are indeed innovative. Large businesses, by virtue of their resources and their market position, can often afford to be less innovative, at least for a while. Perhaps the fundamental truth is that people, in whatever size business, are innovative only when they need to be."
Steven Pegge, Lloyds TSB

"Large companies will always be more innovative than small ones. Why? Because they have the size, the skills, the competences, the supply chain, the distribution networks - all the elements required to take innovation through the system. This is obvious, so why are we having this debate? Clearly, it's all about people. And within any organisation's people, there will always be two groups - those who want to innovate, and those who don't. The key issue is the balance between these two populations. If the innovators are less influential, then innovation will wither, whether the organisation is small or large. But if the balance is the other way, innovation will flourish."
Roger Leech, Unilever

"It's not size that matters - it's what you do with it!"
Joy Edgington, The Pension Service

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…was a dead heat!

At the end of the debate, exactly the same number of votes were cast for the motion as against it - but, in comparison with the vote taken before the debate, there had been a small swing to the opposition. So perhaps the opposition had 'won'.

But the purpose of the debate, of course, was not to identify a 'winner' or a 'loser', but to stimulate discussion and thought, and in this endeavour, everyone was indeed a 'winner'. And in addition, everyone had enjoyed the event immensely!

The act of creation - the philosophical, scientific and artistic perspectives

Dr Alex Oliver, Professor Nigel Weiss and Dinah Casson

Bertrand Russell's '10 commandments'

1. Do not feel absolutely certain of anything.

2. Do not think it worthwhile to proceed by concealing evidence, for the evidence is sure to come to light.

3. Never try to discourage thinking - for you are sure to succeed.

4. When you meet with opposition, even if it should be from your wife, your husband or your children, endeavour to overcome it by argument and not by authority, for a victory dependent on authority is unreal and illusory.

5. Have no respect for the authority of others, for there are always contrary authorities to be found.

6. Do not use power to suppress opinions you think pernicious, for if you do the opinions will suppress you.

7. Do not fear to be eccentric in opinion, for every opinion now accepted was once eccentric.

8. Find more pleasure in intelligent dissent than in passive agreement, for, if you value intelligence as you should, the former implies a deeper agreement than the latter.

9. Be scrupulously truthful, even if it is inconvenient, for it is more inconvenient when you try to conceal it.

10. Do not feel envious of the happiness of those who live in a fool's paradise, for only a fool will think that is happiness.

The philosophical perspective - Dr Alex Oliver

"The philosophical enquiry into the nature of creativity," said Dr Oliver, "goes right back to Plato, who wrote *If any man come to the gates of poetry without the madness of the muses, persuaded that skill alone will make him a good poet, then shall he, and his works of sanity with him, be brought to nought by the poetry of madness.*" The association of high levels of creativity with other less socially acceptable behaviour patterns goes back a long way!

Dr Oliver then suggested a definition of the creative process as "a particular kind of making: something original or novel or surprising; something associated with flair, (so ruling out chance, or the merely mechanical); something valuable, of itself or as a result of the outcome produced. A creative product is the outcome, and a creative person is someone disposed to executing this process". But Dr Oliver then pointed out that this definition is contestable - each of the qualities of originality, flair and value are a matter of degree, and depending on where we set the standards, we can include or exclude people accordingly: if the standards are very high only Einstein and Picasso qualify; if the standards are lower, we can all be included. Also, 'originality', 'flair' and 'value' themselves require careful definition - is 'original', for example, the 'first ever instance in the history of mankind', or 'something new to me'? And what about 'standing on the shoulders' of giants'? Is any idea, in the absolute sense, ever 'original'? 'Value' is also problematical too, for there are many instances where 'creativity' is not valuable at all.

Turning next to the question of how to be creative, Dr Oliver drew on his own experience in encouraging creativity in philosophy, for which Bertrand Russell's '10 commandments' (see page 36) are insightful guidelines. "The key is permission - to give people permission to think for themselves - and also to overcome the fear of failure, to encourage people to be experimental in their thoughts. Formulation of the right problem can also be enormously important, something many students find surprising, for their entire experience is in solving problems which have already been well-defined. And we must always be alert to our tendency to believe in myths - propositions that are just too good to be false. Myths are so satisfying that we all love to believe them. Surely creativity is all about challenging received wisdoms."

The scientific perspective - Professor Nigel Weiss

"What is creativity in science?" asked Professor Weiss. And, being a mathematician, it's no surprise that he offered an equation as the answer: *creativity = originality + imagination*, for originality alone may not be enough. How, then, does imagination manifest itself? The most dramatic manifestation is inspiration, as exemplified by the stories associated with Archimedes (the *Eureka!* moment in his bath), Newton (the apple), and Poincaré, the eminent French mathematician of the late 19th Century, who wrote of his own creative experience that ...*of necessity, there should be a period of long, conscious work, followed by a subliminal, unconscious period, as a result of which inspiration is most likely to occur.* And there is no more powerful example of the significance of Poincaré's "long, conscious work" than Charles Darwin, who spent more than 20 years producing *The Origin of the Species*, working slowly and methodically, building up many examples and much evidence, and using his powers of observation, as well as his vivid imagination, to construct his famous theory of evolution by natural selection.

"In mathematics," continued Professor Weiss, "creativity is strongly associated with elegance, economy, conciseness and precision: witness Archimedes' Theorem, Georg Cantor's investigation of the nature of infinity, and, of course, the recent solution to one of the great problems of mathematics, Fermat's Last Theorem - the proposition that if a, b, c and n are whole numbers, then $a^n + b^n = c^n$ if, and only if, $n = 2$. Like Darwin, Andrew Wiles worked steadfastly on this problem for many years, and, like Newton, he 'stood on the shoulders of giants' - other great mathematicians who provided critical steps along the way to the final proof."

"What about the individual and the team? There are many examples in science of the solo effort, but modern 'big' science - nuclear physics, for example - is very different, for some scientific papers have over one hundred authors. Identifying the contribution of the individual to such collective efforts is very difficult, as is the attribution of the 'creativity'." In concluding, Professor Weiss recognised a convergence with Dr Oliver's views, for, like creativity in philosophy, scientific creativity is very much concerned with defining the right problem. And once the problem has been well-defined, theoreticians seek to solve the problem elegantly; experimentalists need to interpret the observed results imaginatively.

The artistic perspective - Dinah Casson

Dinah Casson also started with definitions, noting that the origin of the word 'creativity' is from the Latin 'creatus', to have grown - so capturing the concept of something that has to be nurtured, fed and protected. "Protecting an idea from being compromised is critical - but you have to know when to be pig-headed, when to be belligerent, when you should let go." Dinah emphasised that creativity is a multi-edged sword, enabling us to change the wheel on a car when we don't have the right tools; to create wonderful things; to cause havoc; to be lethal; to be life-enhancing. "And with creativity, risk is key: how does Sydney Opera House stay up? Has this writer gone too far? In the arts, it's the exploration of this 'edge' that's the most interesting, challenging and exciting."

Dinah continued by pointing out that for one good idea there are 1,000 weak ones - so the *process* of innovation is all-important. "Typically," Dinah told us, "30% of the time on any given project is spent on getting the brief right, 5% on idea generation, 20% on testing ideas, and 45% on protecting the best idea and making it real." But how can you recognise a 'good' idea, and distinguish it from a 'weak' one? In answering this question, Dinah referred to Buckminster Fuller, who said *when I am working on a problem I never think about beauty*; *but when I have finished, if the solution is not beautiful, I know I am wrong*. All good ideas have a 'rightness' about them, and holding that is critical: but to do this, you must be ruthless in editing out. Fundamental to all this is technique: you have to know your stuff, so that what you are doing can be substantiated and backed-up. As Arthur Koestler said, *creativity is a type of learning process, in which the teacher and the pupil are the same individual*.

"Much creativity is driven by the need to solve problems, and defining the right problem, as we have already heard from Dr Oliver and Professor Weiss, is very important in triggering an elegant solution. The Genocide Gallery at the Imperial War Museum, for example, posed the problem of how people might want to view this very difficult material. Do they wish to be by themselves? With their friends? Or to one side, and not be committed? In designing the gallery, we allowed for all these possibilities."
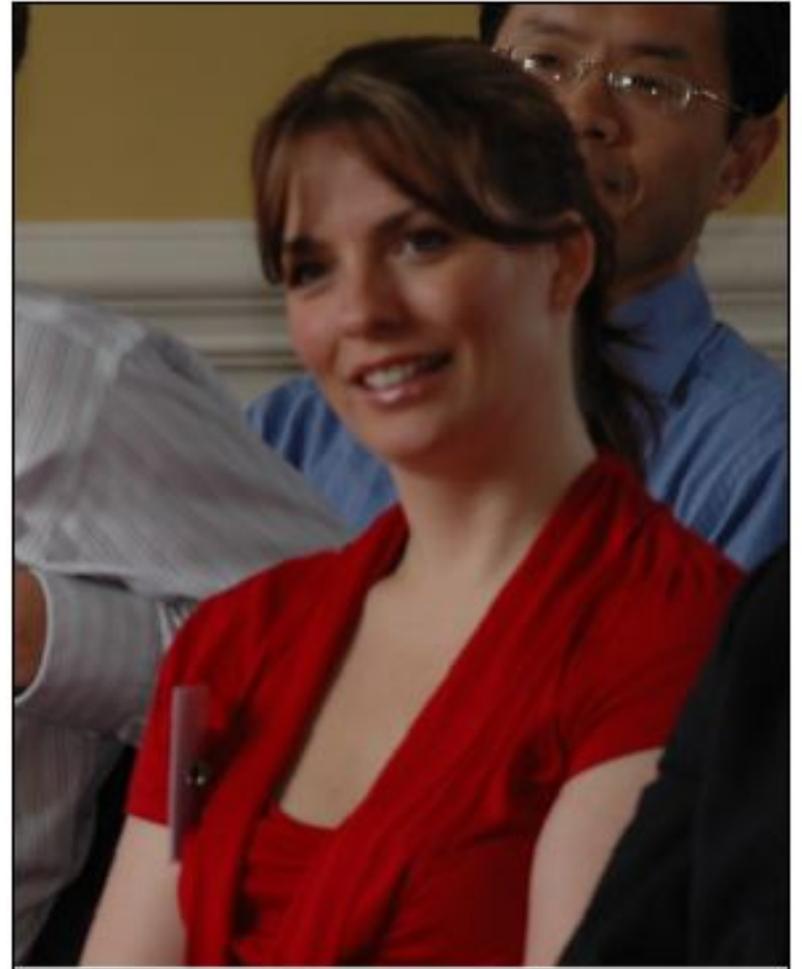
"Most people have a huge creative capacity, but they don't have the opportunity to let it out. My feeling is that we all start with it, and then we spend most of our lives losing it - and encouraging others to lose it too." That, surely, is the challenge; that, undoubtedly, is the opportunity!

Syndicate discussions

The syndicate topics

Each delegate was invited to participate in one of these syndicates:
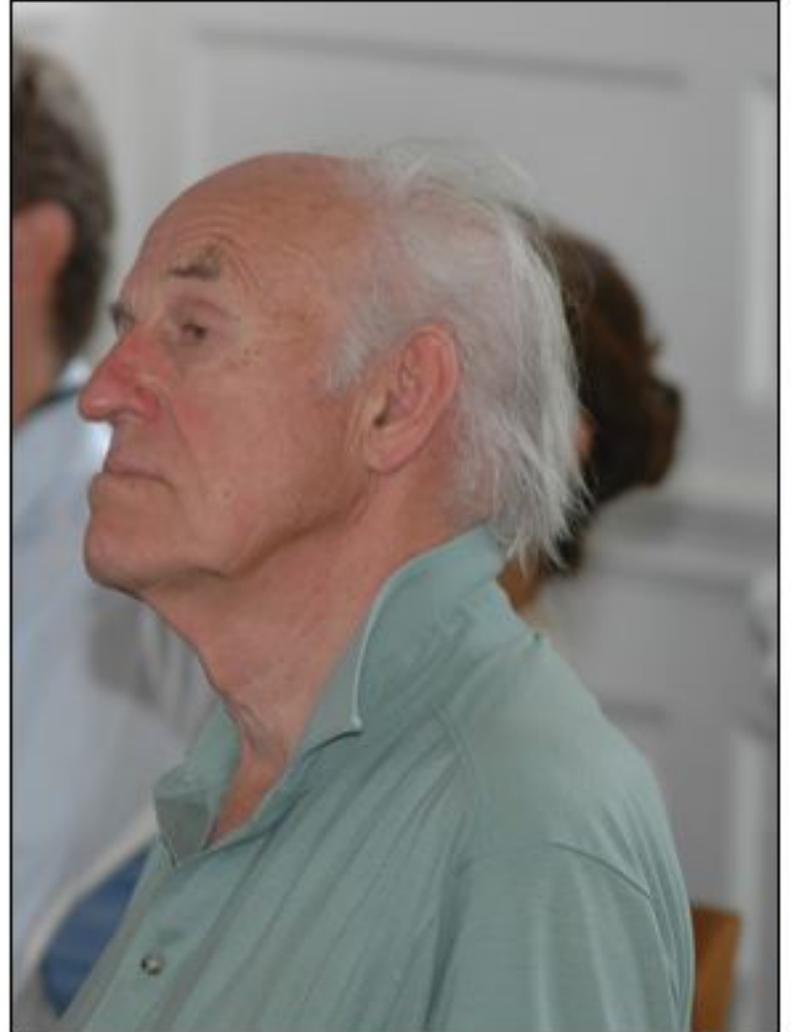
Creativity workshop – how to generate stunning ideas.
How can we make our organisation a true magnet for talent?
Is creativity the ultimate source of competitive advantage?
Is radical innovation more valuable than incremental improvement?

Creativity workshop

Facilitated by Dennis Sherwood

Creativity workshop

This session was not a syndicate discussion, rather it was a 'master class' in creativity, and addressing the question:

"How can talented people turbo-charge their creativity, and be confident of being able to generate stunning ideas 'on demand', even in areas outside of their technical, or normal, expertise?"

The workshop was highly interactive, and a lot of fun!

Here is an exercise in creativity...
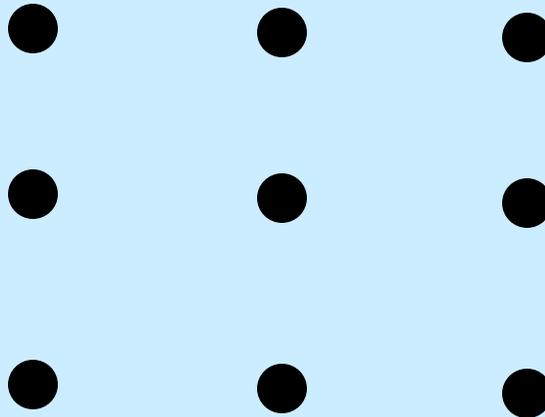
How many different ways can you discover of joining all nine dots with a single straight line?

Koestler's Law and emergence – the twin keys to creativity

In *The Act of Creation,* first published in 1964, Arthur Koestler writes:

The creative act is not an act of creation in the sense of the Old Testament. It does not create something out of nothing; it uncovers, selects, re-shuffles, combines, synthesises already existing facts, ideas, faculties, skills. The more familiar the parts, the more striking the new whole.

Koestler's definition is enormously important:

- Firstly, it states that *you don't have to be a genius, or lucky*.
- Secondly, it tells us that the process underlying idea generation is *the formation of a new pattern of component parts that already exist*.
- Thirdly, as a result, *we can all contribute – we can all be creative*, for there is a process we can all follow: a process of pattern formation, just like manipulating a jig-saw, or playing with *Lego* bricks.

Examples of Koestler's Law are everywhere. All music comprises different sound patterns of the same notes; all matter is formed from different molecular patterns of the same chemical elements; the Sony *Walkman* is a physical pattern characterised by neatness, the cassette tape, and headphones, but without the conventional tape recorder's ability to record (see also pages 78 and 79). Sony did not invent neatness; nor the cassette tape (first introduced by Philips); nor headphones (which pre-date speakers). But Sony were the first to create the new *pattern*, formed by bringing these pre-existing component parts together. And they did it 'just right' – the *Walkman* wouldn't work if the jogger had to carry those bulky speakers.

The 'just-rightness' of the *Walkman* is a powerful example of *emergence* – the property of a *system of appropriately connected parts* to exhibit characteristics that appear at the level of the system, rather than at the level of any of its components. An example: *"I went to the bank"*. This is a system, which we call a 'sentence', of appropriately connected parts, which we call 'words'. The system demonstrates the emergent property of 'meaning' – we understand what the sentence is saying. This meaning cannot be inferred from the individual component parts: I can study the word 'to', in isolation, for ever, yet this will never throw any light on the meaning of the sentence, which can be inferred *only* from the system *as a whole*. Also, if I connect the parts together in another way, say, *"the I bank to went"*, the meaning disappears; likewise, if something is missing – *"I went to the"* – this doesn't work either. 'Good' patterns can therefore be distinguished from 'poor' patterns by virtue of the presence, or absence, of emergence.

Creativity is the formation of a new pattern, from pre-existing component parts, such that the resulting system exhibits an emergent property that has interest or value, in an appropriate context.

'Deliberate creativity'

No, that isn't an oxymoron. Creativity can be a totally deliberate act. Yes, that might sound odd, for creativity is usually associated with sudden moments of inspiration, and with the actions of 'creative' people. If creativity can be 'deliberate', that implies that there is a 'process' for generating ideas, and that 'ordinary' people can learn the process and apply it. Surely that can't be the case? Well, actually, it is. And the explanation is all in 'Koestler's Law' (see page 50).

We have already seen - witness pages 37, 39 and 41 - that there is considerable debate about a satisfactory definition of creativity. Does Koestler's Law, coupled with the concept of *emergence*, put that debate to rest? For Koestler's Law tells us that creativity is a process of pattern formation, where novelty arises in the *pattern*, rather than in the component parts from which the pattern is formed. For, most importantly, those component parts *already exist*. The most immediate example of Koestler's Law is music: neither Beethoven nor the Beatles invented the notes, they were already there. But they crafted the most wonderful patterns - patterns which are not just random jumbles, but truly show emergence.

So, if Koestler's Law tells us what creativity *is*, how do we do it? How do we discover a 'new pattern of existing components'? In an organisational context, what are the 'components'? And, if these 'components' already exist, where are they?

Taking the last question first: if the 'components' already exist, they can be in only one of two places - either they are laid bare, like the notes on a piano, or they are bundled together in existing patterns. Alas, there is no business 'piano'. But there are a huge number of existing patterns - patterns of our existing products, our existing processes, our existing strategies, our existing learning, our existing knowledge, our existing experience. So, our starting point is to study these existing patterns, and get behind the surface to reveal the component parts from which they are made. If that is the existing pattern, then, by definition, a new pattern must be different. That's obvious. But it is also a key insight. For we can 'force' differences by asking, of each component part in a relevant existing pattern, "how might this be different?".

Let's make this concrete. Suppose we wish to invent a new product in consumer electronics. Tape recorders already exist, formed from components such as bulkiness, the ability to record and play back, speakers, reel-to-reel magnetic tape, mains electricity. How might any of these be different? What would have to happen to make a tape recorder neat and small? What would happen if a tape recorder didn't record? Or play back? How could a tape recorder work if it didn't have speakers? Or didn't use reel-to-reel magnetic tape? Or didn't store the signal magnetically? And if it didn't plug into the wall? In answering these questions, *drawing on technologies that already exist*, it's not long before we've invented the *Walkman*...

Yes, this is easy with hindsight. But it can also be done without knowing the 'answer' beforehand - that's what the *InnovAction*™ process is all about (see page 52).

InnovAction!™ – A process for deliberate creativity

- **Step 1 – Select the appropriate focus of attention**

  "We need to invent some new products in the bottled water market."

- **Step 2 – Define what you know**

  "I drink it"... "It comes in clear bottles"... "It's healthy"...

- **Step 3 – Share**

  "The cap on the bottle is either flat, or like a baby's bottle to make it easy to drink."

- **Step 4 – Ask "How might this be different?"**

  "What if the cap were not flat?"

- **Step 5 – Let it be...**

  "Mmm...It might be cone-shaped"... "Or a hemisphere".,. "Or hemisphere upside-down, like a dimple"... "Which could form another container"... "What would we put in that?"... "Cordial, perhaps"... "Or whisky"... "Or aspirin"... "So you mean a twin pack of two aspirins in the cap of a small bottle of water, just enough to take the aspirins with?"... "I hadn't thought of it quite precisely as that, but now you mention it, what a good idea!"

- **Step 6 – ...Then repeat steps 4 and 5 for another feature...**

  "What if *I* didn't drink it. Who – or what – else might?"

Nine dots revisited

Here's how the *InnovAction!*[TM] process can unlock the nine dots puzzle…

- **Step 1 – Select the appropriate focus of attention**

  "We need to join all nine dots with only one straight line."

- **Step 2 – Define what you know**

  "There are nine dots"… "in three columns"… "and three rows"…

- **Step 3 – Share**

  "The paper is blue"… "and the dots are black"… "The paper isn't moving"…

- **Step 4 – Ask "How might this be different?"**

  "What if the paper wasn't blue?"

- **Step 5 – Let it be…**

  "It could be any colour we like"… "say, white, or red, or yellow"… "or black" … "which would cause the dots to disappear"… "That's interesting… how could we make the paper black?"… "Use paint, I suppose"… "and a brush"… "or a roller"… "Roller! That's how we join all the dots! As long as the thickness of the 'pencil' is wide enough, we can join all the dots with one straight line…"

- **Step 6 – …Then repeat steps 4 and 5 for another feature…**

  "The paper isn't moving…suppose the paper could move as well as the pencil?"

How many other solutions can you find in the same way?

How can our organisation become a true magnet for talent?

Facilitated by Alison Bott

How can our organisation become a true magnet for talent?

Your task

Your syndicate is a cross-functional team set up by the CEO of a global company to explore how best to make your organisation a true magnet for talent. Your task is to formulate a set of recommendations relating to:

- the *key issues* associated with making an organisation a magnet for talent
- the *major pitfalls* that someone wishing to do this might encounter, and should avoid
- your suggestions as to *best practice* for making an organisation a magnet for talent
- your *ideas and recommendations* on this topic that you would like to share with the other delegates.

Please capture your findings on the pre-printed flipcharts, and summarise your findings as a 10 minute presentation, to be given in the Latimer Room.

Some suggestions as to process

Everyone in the syndicate will have had considerable experience of working with talented people. In the first instance, it may therefore be helpful if, individually and in silence, each delegate makes some notes on:

- what 'talent' actually means in a business context
- what a 'talented person' is, and how such a person can be distinguished from everyone else
- the circumstances in which having access to talented people is a 'good thing'…or perhaps a 'bad thing'
- in your experience, the circumstances in which talented people are attracted to an organisation, and stay there…
- …and those in which talented people aren't attracted in the first place, or, if they are initially attracted, subsequently leave
- what works in managing talented people…and what doesn't
- any thoughts you might have on alternative business models: for example, do talented people have to be employees?

Once everyone has formulated their own views, these can then be shared, leading to a general discussion, and the formulation and agreement of conclusions. It may be that there is no single, unique 'best' method for making an organisation a true magnet for talent – in which case, the syndicate is invited to define what needs to be done to make different methods work effectively.

Becoming a magnet for talent

Every organisation competes in one particular market - even public sector organisations that feel they don't 'compete', and who are still relatively untouched by the drive for 'market forces'. The market in question, of course, is the market for recruitment: any individual has free choice as to the organisation he or she chooses to join, or indeed to choose not to join any organisation at all and become a self-employed independent. And even when an individual has 'committed' to join a particular organisation, that individual is free to resign, and move elsewhere.

Organisations depend on their people, and many believe that attracting, motivating and retaining the 'best' people is a major factor in becoming, and staying, the 'best' organisation - a belief made more stark when expressed the other way around: if an organisation can only attract, motivate and retain a workforce which is manifestly not 'the best', then becoming the 'best' organisation is a darned sight harder to do.

Recruiting, motivating and retaining the 'best', the most 'talented', people is therefore of true strategic importance to many organisations. But, as we all know, it's not so easy to do. What does 'talent' actually mean, precisely? And is this definition uniform across all organisations and roles? Or is 'talent' context-dependent? And if we can define what 'talent' means, in general or in our particular context, how can 'talent' be recognised, especially in what are often rather brief and artificial interactions such as interviews? And to complicate matters further, does 'talent' come bundled with some other, less attractive, attributes such as being disruptive, overly argumentative, and generally unmanageable?

This syndicate therefore explored these important and difficult issues. Underpinning the discussions was the recognition that the most fundamental attribute of a 'talented' person is the presence of an enquiring, individual mind. A mind that is not necessarily driven to be self-obsessed, anarchical or cynical, but a mind that seeks stimulation, engagement and reason. And so any organisation that fails to stimulate and to engage, and seeks to enforce compliance with rules that are rules because they are rules, will end up populated by those who do not seek stimulation, don't require engagement, and are happy to follow rules blindly. What, then, does your organisation do to provide stimulation, engagement, and the pursuit of reason?

What, precisely, is 'talent' in this context?

- Although, in a conference such as this, there is a strong temptation to map 'talent' onto 'creativity', this is too restrictive. Yes, creativity is an important component of 'talent', but there are many other components too.
- Certainly, we would expect specialists to be 'talented' in their chosen areas, and to demonstrate appropriate expertise accordingly…
- …but maybe 'being talented' is an attitude of mind…
- …or rather an attitude of *minds*…
- …for there is the mind of the individual, in that any lack of self-belief and self-confidence makes it much less likely that you will consider yourself to be 'talented', let alone be considered by others to be 'talented'…
- …and there is also the mind of the person making the judgement - if you believe that someone else is not 'talented', or indeed *cannot* (for whatever reason) be 'talented', then you will not give that person any activities that might require 'talent', so denying the person any opportunities to display 'talent', thereby validating your belief that the person is indeed 'untalented'! This is, of course, a totally self-fulfilling prophecy.
- So perhaps *everyone* is 'talented', to some degree…
- …and let's also accept that some people will be more 'talented' in any given area then others…
- …in which case, a primary job of management is to create the conditions in which each individual can make the best use of their abilities.

How would I recognise a 'talented' person?

A 'talented' person is someone who...

- ...is fully 'fit-for-purpose' in terms of being able to match the needs of the organisation...
- ...as well as being willing to accept the organisation's values...
- ...and to fit within the organisation's culture...
- ...being fully aligned with the organisation's 'direction of travel'...
- ...injecting energy and enthusiasm into their tasks, their team and the organisation as a whole...
- ...demonstrating the potential for personal, as well as organisational, growth...
- ...so progressively becoming able to exercise a wider role...
- ...whilst being adaptive as situations change...
- ...and having an appetite for pro-active development.

What are the key issues to manage as regards recruitment?

- The recruitment process itself is in two stages…
- …getting potential recruits to knock on your door in the first place…
- …and then evaluating the candidates.
- In attracting candidates, the kudos of the employer brand is key - strong brands portray success, which is very attractive. An important component of brand value is therefore its power in the recruitment market, and in making potential recruits feel proud that they might have the opportunity to work for a brand that not only they have heard of, but their friends have too.
- Potential candidates gather information about prospective employers from a wide variety of sources, from personal recommendation to press comment, from the product or service itself to advertising. What message is your organisation sending?
- Once a candidate has expressed initial interest, a complex interaction begins in which both sides alternate between 'buying' and 'selling'. Talented candidates are, almost by definition, people who can exercise choice, and so, although in the earlier stages of recruitment, the organisation has more power and can act as a 'buyer', a time is reached at which the organisation turns into a 'seller', hoping that the candidate will accept their offer.
- Candidates are alert to this from the very first contact, and are always asking "is this the kind of organisation I would like to join?".
- Many - often younger - candidates have a strong sense of 'higher purpose' - how can the organisation tap into this strong motivator?

What are the key issues to manage as regards retention?

- 'Talent' is multi-dimensional: yes, talented people are excellent at their job, largely because they have high levels of technical skill, are willing to take responsibility, actively wish to take initiatives, and can think for themselves…
- …but each of these has a down-side too: being excellent at the job can often lead to boredom and a desire to move on; high levels of technical skill in junior people can often make life uncomfortable for less skilled managers in more senior roles; a willingness to take responsibility and initiatives can be associated with recklessness; and thinking for oneself can be organisationally disruptive.
- Talented people also have a well-developed sense of their self-worth, and know that they have value in the market…
- …so, overall, retaining talented people can be quite a challenge!
- The key issue is how best to allow the talented person to demonstrate, and be recognised for, their individual flair and individuality…
- …whilst creating conditions whereby the talented person recognises the value of being part of a larger team.
- The organisation should therefore ensure that its values are clear…
- …and that they are 'lived'…
- …whilst providing opportunities for learning and advancement…
- …by safely empowering the individual…
- …and allowing the individual ownership.
- Overall, the organisation should seek to build and maintain an environment of challenge, fun and professionalism.

Silver Bullet

What are the major pitfalls?

- An environment of boredom drives talented people out…
- …as does bureaucracy in general, let alone mindless bureaucracy in particular.
- Talented individuals will feel frustrated if they perceive barriers to their personal fulfilment…
- …a situation which is aggravated if they believe that these blockers are attributable to their managers…
- …who might be less 'talented' than they are.
- Lack of recognition hurts…
- …but not as much as when others 'steal' the recognition that is more justifiably 'mine'.
- Talented people are impatient…
- …have 'spark'…
- …and like a fast pace of change…
- …so an organisation that moves too slowly has no appeal…
- …as does one in which, once a job or task is done, there is an overly long gap until the start of the next job or task: talented people hate being idle.
- And talented people are hyper-sensitive to the "Dilbert" effect - the situation that arises when, in their view, apparently uncaring, idiotic management are doing silly, arbitrary things that are never explained, and that seem to make no sense at all.

What does 'best practice' look like?

- An honest and fair 'contract', which sets stretching, but realistic, expectations.
- Personal development plans, which individuals can achieve at their own pace.
- Active listening: talented people want to feel listened to, even if their ideas are not adopted - as long as the reasons why not are explained.
- Formal, frequent feedback on how they are doing right now…
- …as well as constructive, fair, honest and sensibly frequent appraisals.
- The opportunity for the individual to have freedom of expression…
- …and an appropriate degree of autonomy.
- Some personal time and space - to innovate, perhaps!
- The opportunity to listen to, and learn from, role models and change agents…
- …and to learn to act as they do.
- A reward structure that:
  - offers recognition
  - contains appropriate financial and non-financial components
  - embodies personal and organisational progression
  - is focused on the individual as an individual, rather than as a grade in the hierarchy
  - and fairly and constructively acknowledges weakness too.

Silver Bullet

Ideas and recommendations

- **Offer dual career paths to allow for technical experts who do not wish to become 'managers'.**
- **Behave like a flat organisation - explicit hierarchy dampens innovation.**
- **Constructively prepare the individual for the next career move - including a move out of the organisation if that is good for the individual.**
- **Form alliances with other companies for both recruitment and career development: for example, mutual secondments - would this be especially valuable for organisations that have supplier-purchaser relationships?**
- **Give permission to be creative.**
- **Deliberately encourage diversity (in the true, rather than the 'politically correct', sense of the word): people with different perspectives, when brought together, will generate a wider range of ideas than people who all think similarly.**
- **Is it 'good' for the organisation to have some 'sand in the oyster' - some people who challenge the *status quo* and who ask the difficult questions? In principle, yes, this is a good idea; but in practice it can be very difficult to achieve. Just how much 'sand' can an organisation accommodate, before the 'sand' is isolated or expelled? And how long is it going to be before the 'outsider' chooses to move on of his or her own accord?**

Is creativity the source of ultimate competitive advantage?

Facilitated by Professor Bobby Glen

Is creativity the ultimate source of competitive advantage?

Your task

Your syndicate is a team of experts, convened by the CBI, to enquire into how to enhance the competitive advantage of British industry. Your task is:

- to identify the *key factors* which underpin competitive advantage...
- ...and the role, if any, that *creativity* makes in this regard...
- ...and, assuming that creativity does play a role, to formulate some *recommendations as to how best to convince senior managers* within British industry that this is indeed the case...
- ...and also some *recommendations as to what those managers should do to encourage creativity* in their businesses.

Please capture your findings on the pre-printed flip-charts, which, on completion, should be taken to the Latimer Room.

Some suggestions as to process

Everyone in the syndicate will have had considerable experience of managing creativity. In the first instance, it may therefore be helpful if, individually and in silence, each delegate makes some notes on:

- precisely what 'creativity' means to you...and what you think it might mean to 'Joe Manager' - is there a difference?
- the factors that you think underpin competitive advantage...and the factors you think 'Joe Manager' might list - once again, is there a difference?
- the extent to which creativity is, or is not, a major factor
- your thoughts on how to convince senior managers accordingly
- your recommendations as to how creativity can be encouraged.

Once everyone has formulated their own views, these can then be shared, leading to a general discussion, and the formulation and agreement of conclusions.

Is creativity the ultimate source of competitive advantage?

In a competitive market place, where consumers have a (reasonably) free choice over whose goods or services to purchase, what drives that choice? This is of course a fundamentally important question, for when consumers exercise that choice, their willingness to exchange their money for the appropriate good or service provides the organisation supplying that good or service with the lifeblood of cash - cash that pays the organisation's salaries, cash that can be re-invested in the provision of goods and services in the future.

That set of conditions which embraces the consumer's relative preference to purchase from organisation A relative to organisation B is, of course, the competitive advantage of A over B, and the overarching goal of all organisational strategy is how to build and maintain your own competitive advantage, or to claw back the competitive advantage of others.

What, though, is the source of competitive advantage? Is it the brand, so that consumers recognise and trust the organisation? Certainly, branding is enormously important, especially in consumer markets. But does a well-known brand continue to confer competitive advantage even if the product or service is no longer quite as good as it used to be? Perhaps, then, it's the 'product' - organisation A has competitive advantage over organisation B because it's product is cheaper, or substantially different. This, of course, was the view of Professor Michael Porter of Harvard Business School, who advocated that wise business strategies should be formulated with overarching objective of becoming either the lowest-cost producer, or significantly different from all others, in any given market.

But how do you relentlessly force down cost? Or become consistently different? For your competitors are also trying to do the same thing, and the cost advantage that organisation A might have enjoyed for many years might be eroded at a stroke by organisation B's investment in new technology…

What, then, is the source of ultimate competitive advantage? Or is there no such thing?

What constitutes competitive advantage?

- Our definition of competitive advantage is *the organisational ability to satisfy customers in excess of their expectations, and better and quicker than competitors*.
- To achieve this, creativity is of course fundamentally important, but ideas on their own have no value. It's *innovation* that really counts: the process of unlocking ideas and turning them into reality.
- Turning raw ideas into reality doesn't happen by itself, so the key task of senior management is to organise the organisation so that it does indeed happen.
- Obviously, you have to have some good ideas in the first place...
- ...which is all about unlocking the creative potential in the people, because it is inherently there. To do this you have to give people space: if you don't, the potential will be there, but it will remain untapped.
- Creativity should not take place in an 'ivory tower': it should be well-informed by information about what customers actually want...
- ...as well as by having good insights into what customers might want, but haven't yet asked for directly.
- An innovative culture thrives on empowered teams...
- ...with effective knowledge sharing and transfer...
- ...in the context of a well-managed attitude to risk...
- ...and performance measures which encourage creativity and innovation...
- ...as well as a good speed of service and delivery.
- Overall, being creative, and encouraging innovation, must be twin central pillars of the organisation's strategy and culture.

How to convince senior managers that innovation is important

- There's always begging and seduction! But when these fail, try…
- …actively involving the key decision-makers in the ownership of ideas…
- …including the idea that innovation should be the heart of strategy…
- …for every idea, especially the idea that innovation should be the heart of strategy, needs to have a champion so that the idea is accepted, and maintains momentum.
- Metrics are important. These obviously differ from organisation to organisation, but they do drive behaviours - indeed, that's their purpose. A very common situation is that in which an organisation's current performance measures do not explicitly encourage creativity and innovation - which is probably why creativity and innovation aren't happening. In which case, it's essential to identify ways whereby creativity and innovation can be seen to be critical to the achievement of the performance measures which are currently in place.
- So, what are the key problems being faced by the organisation? And how can either a specific instance of creativity and innovation - or better, building a culture of creativity and innovation - solve them?
- Although getting the culture right is likely to be the best approach over the long term, proving the concept with a specific, successful example is a very powerful way of convincing the sceptics: indeed, Dinah Casson vividly showed how effective models and prototypes can be.
- Education and knowledge are also important. There are lots of myths around words like 'creativity', so it is very helpful to ensure everyone is talking the same language, based on a shared understanding of what creativity and innovation really are.

How to encourage creativity and innovation

- Innovation must be clearly positioned as a business priority: if there isn't a top-level commitment, strategy and vision to do it, then it just won't happen.
- But just saying "make innovation happen" doesn't help much either. Yes, the commitment is a necessary condition, but it isn't sufficient. Other things need to be in place too, such as...
- ...the provision of a toolkit, and the corresponding training, to underpin, for example, idea generation, wise evaluation and knowledge sharing...
- ...the active building of a culture that supports every aspect of creativity and innovation, which includes, as just a few examples...
- ...elevating the importance of inventors and idea generators...
- ...celebrating success...
- ...encouraging learning...
- ...allowing for (non-negligent) failure - remember the words of Thomas Watson, the founder of IBM: "If you want to succeed, double your failure rate"...
- ...empowering people and giving them autonomy...
- ...within a framework of encouragement and support...
- ...and in a context of a wise and balanced attitude to risk: innovation isn't risk free - but nor is maintaining the *status quo*.
- Overall, you have to get the understanding, belief and support of senior management. And to get that, you need to prove it. So take a particular part of the business, or a specific problem, and prove that it works. However much you talk about it, nothing works better than real, concrete proof.

Is radical innovation more valuable than incremental improvement?

Facilitated by Roger Leech

Is radical innovation more valuable than incremental improvement?

Your task

"I'm pleased you're working on this project," said Chris, the CEO, "for it's vitally important for the growth of our business that we become a veritable powerhouse of innovation. I'm just fed up with all the dull, boring, derivative 'ideas' that come up for Board approval. We need to be far more inspirational, imaginative, radical!"

You heard this during the briefing session you received for an internal project as to how to enhance innovation within the company.

- Do you agree with Chris's (implied) view that *only radical innovation has value*. If so, what *recommendations* would you make to drive radical innovation throughout the company?
- And if you don't agree, *why not*? How will you *influence* Chris? And what *recommendations* would you make accordingly?

Please capture your findings on the pre-printed flip-charts, and summarise your findings as a 10 minute presentation, to be given in the Latimer Room.

Some suggestions as to process

Everyone in the syndicate will have had experience of managing innovation. In the first instance, it may therefore be helpful if, individually and in silence, each delegate makes some notes on:

- your own definitions of 'radical' and 'incremental' - what, precisely, is the difference?
- your experience of when 'radical innovation' has been a 'good thing'…and when a 'bad thing'…
- …and likewise, your experience of when 'incremental improvement' has been a 'good thing' and a 'bad thing'
- your recommendations accordingly.

Once everyone has formulated their own views, these can then be shared, leading to a general discussion, and the formulation and agreement of conclusions.

Is 'radical' better than 'incremental'?

The comment made by 'Chris', the CEO in the cameo on page 72, that 'merely incremental improvement is not good enough - we need truly radical innovation!' is not uncommon. Sometimes, this is 'Chris's' code for "the only person whose ideas count around here is me"; sometimes it's a statement of truth that, for whatever reasons, there never are any 'big ideas' on the table (perhaps because the organisation culture suppresses them - see page 77); sometimes it represents a belief that 'mere' incremental improvement has little value. This syndicate focused on this last possibility, and explored whether or not the mapping "radical = high value, incremental = low value" is valid.

Their starting point was to identify some innovations that the group agreed were indeed radical (see pages 74 and 75), from which they identified the key characteristics which can be used to judge whether any particular innovation should be classified as 'radical' or 'incremental'. This proved to be less easy than it might first appear, for the group agreed that designating a specific innovation as the one or the other depends not only on the system of interest, but also on the perspective of the judge: so, for example, those inside a business might regard a particular innovation - say, in packaging - as incremental, since many aspects of the product (the product itself, its manufacture, its pricing, its distribution) remain unchanged, whereas the customer might regard the change as radical (and stop buying it!).

Radical? Or incremental?

	Radical	Incremental
Peugeot 207	0	7
On-line banking	5	2
Cyber library	2	5
Pod cast	3	4
Boeing 747-400 series	0	7
Concord	6	1
Flora 'light'	2	5
Flora 'proactiv'	2	5
The renaming of the cleaning product *JIF* as *CIF*	0	7

And some examples of radical innovation

Tesco's introduction of Tesco Local

The rescheduling of BBC Radio 4

The adoption of the microcomputer within IBM

IBM's move from 'boxes' to services

NHS Direct

The new GP appointment system

The NHS's outsourcing of certain aspects of medical care

What, precisely, do we mean by 'radical'? And by 'incremental'?

A 'radical' innovation is one which...

- ...represents a 'big' change from the *status quo*...
- ...usually taken as one, single, large step rather than as a series of smaller ones...
- ...associated, often, with a high cost...
- ...and, almost always, with an even higher risk...
- ...for not only is it significantly different from the *status quo*...
- ...it is probably challenging that *status quo* too...
- ...and so is often regarded as 'scary'.

In contrast, an 'incremental' innovation is one which...

- ...is much more obviously an evolution of the *status quo*...
- ...and can often be regarded as 'cosmetic' (such as a change in packaging)...
- ...and so is usually associated with much less risk...
- ...for it does not challenge the *status quo* at all...
- ...and could well be arrived at by *ex ante* consensus...
- ...or readily regarded, *ex post*, as a 'sensible thing to do'...
- ...although, even with something as 'incremental' as a change in packaging, the innovation can sometimes be rejected by the market!

Thoughts, ideas and recommendations

- The difference between 'radical' and 'incremental' is one of degree, not substance, so we should be careful not to use these labels unwisely, or to convey coded messages, such as 'good' and 'bad': some incremental innovations can be very good indeed (surely *KitKat 'chunky'* is incremental, relative to the four-finger variety), and some radical innovations can be a commercial disaster (the *Sinclair C5*)...
- ...a situation made even more complex by recognising that the same innovation might be labelled 'radical' by one community, and 'incremental' by another (so maybe *KitKat 'chunky'* is radical after all...).
- Underpinning much of the 'radical'/'incremental' debate is the question of risk: to those who have to decide whether or not to back, and invest in, the development and commercialisation of an idea, 'incremental' usually maps onto a situation in which not many things are changing at once, and so is regarded by managers as being of lower, rather than higher, risk; 'radical' usually implies lots of things changing at once, and therefore higher, rather than lower, risk. An organisation with a low appetite for risk will inevitably avoid the radical, and so the organisation 'learns' not to think of radical ideas in the first place. Maybe that's what is at the heart of 'Chris's' comments in the cameo on page 72 - perhaps he is trying to encourage a greater appetite for risk, with the prospect of greater reward too.
- Organisations which, over the years, have 'learnt' not to be radical, find it very difficult, if not impossible, to become more expansive in idea generation, and less risk averse in idea evaluation, in a reasonable time. So maybe radical ideas are best bought-in, or developed in smaller, 'off-site' organisational units.

Koestler's Law in action - the Sony *Walkman*

Conventional tape recorder	Sony Walkman
Big	Small
Clumsy	Neat
Records	Does not record
Plays back	Plays back
Uses magnetic tapes	Uses magnetic tapes
Tapes are on reels	Tapes are in cassettes
Speakers are in the cabinet	Speakers are in headphones
Uses mains electricity	Uses batteries

The Sony *Walkman* was first launched in 1979. The right-hand column shows the key 'component parts' from which the 'pattern' of the *Walkman* is formed, shown so as to permit a like-for-like comparison with a conventional reel-to-reel tape recorder. As can be seen, the patterns are different, which is how we distinguish a *Walkman* from a conventional tape recorder when we see one. The comparison also highlights those component parts which are common to both products (in black), and those which are different (red).

All the components in red were well-established by 1979: smallness and neatness had been a common feature of consumer electronics products since the introduction of the transistor radio in the 1950s; record players are devices which play back but don't record; the cassette tape was launched by Philips in 1963; headphones had been invented decades before; likewise batteries. Sony did not originate or invent any of these items: Sony were simply the first organisation to form a new *pattern* of these pre-existing components to produce a new product which is quite arguably radical, and absolutely certainly a commercial blockbuster.

A new slant on the incremental/radical debate

Here is an approach to resolving the incremental/radical debate, based on Koestler's Law (see page 50), which (briefly) states that all creativity is the formation of new patterns of existing components. As noted on pages 50 and 51, a most illustrative commercial example of Koestler's Law is the Sony *Walkman*, the key components of which are shown on page 78, alongside the equivalent components of conventional reel-to-reel tape recorders. As can be seen, the *Walkman* is indeed a new pattern formed from pre-existing component parts. This form of before-and-after analysis can be carried out, after the event, for *all* new ideas; furthermore, the *InnovAction*™ process (see pages 51 and 52) is a disciplined way of discovering the 'right-hand' column, the new idea, from any starting point, the existing pattern, as described in the 'left-hand' column.

This form of analysis resolves the incremental/radical debate, for, if we agree that the descriptions 'incremental' and 'radical' are *a property of the idea itself* (rather than a description of the acceptability of the idea within the appropriate market, which will be discussed shortly), then we can use a like-for-like comparison, such as that shown on page 78, as a *metric of radicalness*. In general, in comparing the two columns:

• the greater the number of items in 'red' in the right-hand column, and
• the greater the difference between any item in 'red' and the corresponding item in 'black' in the left-hand column

then the more radical the idea. Also, this type of comparison demonstrates that the distinction between 'incremental' and 'radical' is indeed a matter of degree, not substance.

But what about the impact on the appropriate market? Will the idea be a success? This cannot be determined in advance: whether or not the new idea turns out to be a blockbuster or a damp squib is in the gift of the market. Certainly, no individual and no organisation will take the trouble, bear the costs and take the risk of innovation without the sincere belief that the new idea will indeed be a blockbuster - but the market might prove otherwise.

The damp-squib/blockbuster distinction is therefore a property of the interaction of the idea with the market, which can be determined *only after the idea has been implemented*. This is in contrast to the incremental/radical distinction, which is a property of the idea itself, and so can be determined *once the idea has been formulated*. The incremental/radical distinction is quite separate from the damp-squib/radical distinction, and there is no intrinsic correlation between the two: the *Sinclair C5* was a radical idea, and a positively rain-sodden squib; the *Kit-Kat 'chunky'* was incremental, and a commercial blockbuster; *Pepsi Cola's* rebranding in blue cans was incremental, and a disaster; the Sony *Walkman* was radical, and of stupendous value.

Building an innovative culture
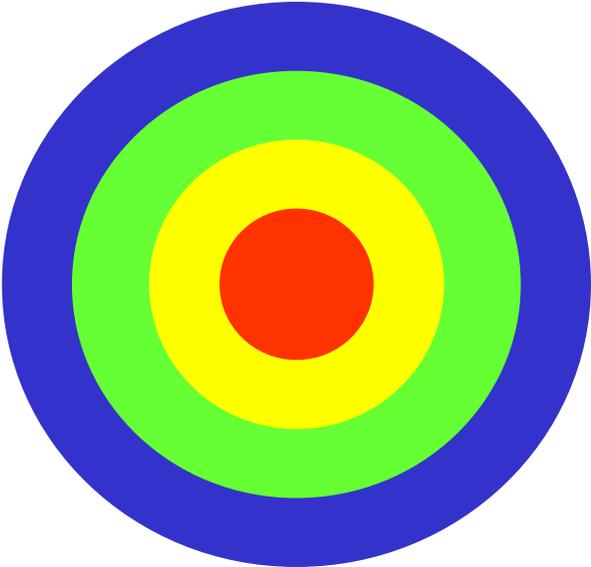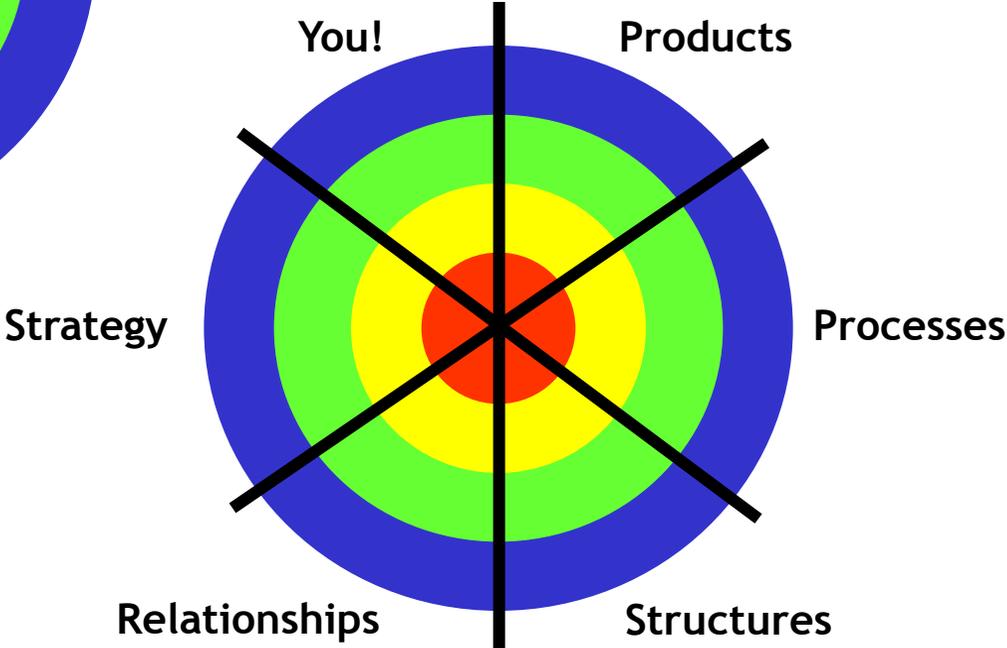
Dennis Sherwood

Innovation is a process...

- 🟥 **Idea generation**
- 🟨 **Evaluation**
- 🟩 **Development**
- 🟦 **Implementation**

...applied to a number of domains

You!   Products

Strategy   Processes

Relationships   Structures

Innovation as an organisational process

Having a great idea, recognising it, and doing something effective with it is, of course, potentially enormously valuable. But having great ideas all the time, consistently choosing the very best, and continuously delivering them superbly, is even better. So how is it that some organisations are lucky to have just one idea, whereas others churn them out day after day? What is it that the innovative organisation has that the dull one lacks? No, it isn't some 'magic ingredient' that is present in organisation A but not in organisation B: rather, it's the fact that organisation A has a cohesive, coherent culture of innovation. 'Culture', though, is an amorphous, nebulous concept. How do we get real, and pragmatic?

The first step is to recognise that creativity and innovation are not accidental: they can, and should, be made to happen deliberately. To do this, innovation should be recognised as a formal organisational process, and managed as such.

If we accept that innovation is all about having great ideas *and* making something actually happen, then this may be represented in terms of four stages:-

> *idea generation* - having great ideas in the first place, this of course being 'creativity'

> *evaluation* - deciding which ideas to progress, and which can be afforded

> *development* - ensuring that the selected ideas are fully effective

> *implementation* - bringing the idea to full fruition.

A truly innovative organisation manages each of these stages effectively and actively: ideas are encouraged, and everyone in the organisation is trained in 'deliberate creativity' (see page 51) ; evaluation is balanced and fair; development converges on agreed goals; implementation is done on time, within budget, and without compromising the originally agreed objectives. But it doesn't have to be like that. In some organisations, only the boss's ideas get air time; evaluation is a gladiatorial contest; development is systematic dumbing-down; and implementation is an increasingly frenetic elimination of features in a desperate rush to meet the budget.

This applies not just to new products, but to new processes, organisational structures, relationships and strategies too. And the richest form of innovation is when you change your mind!
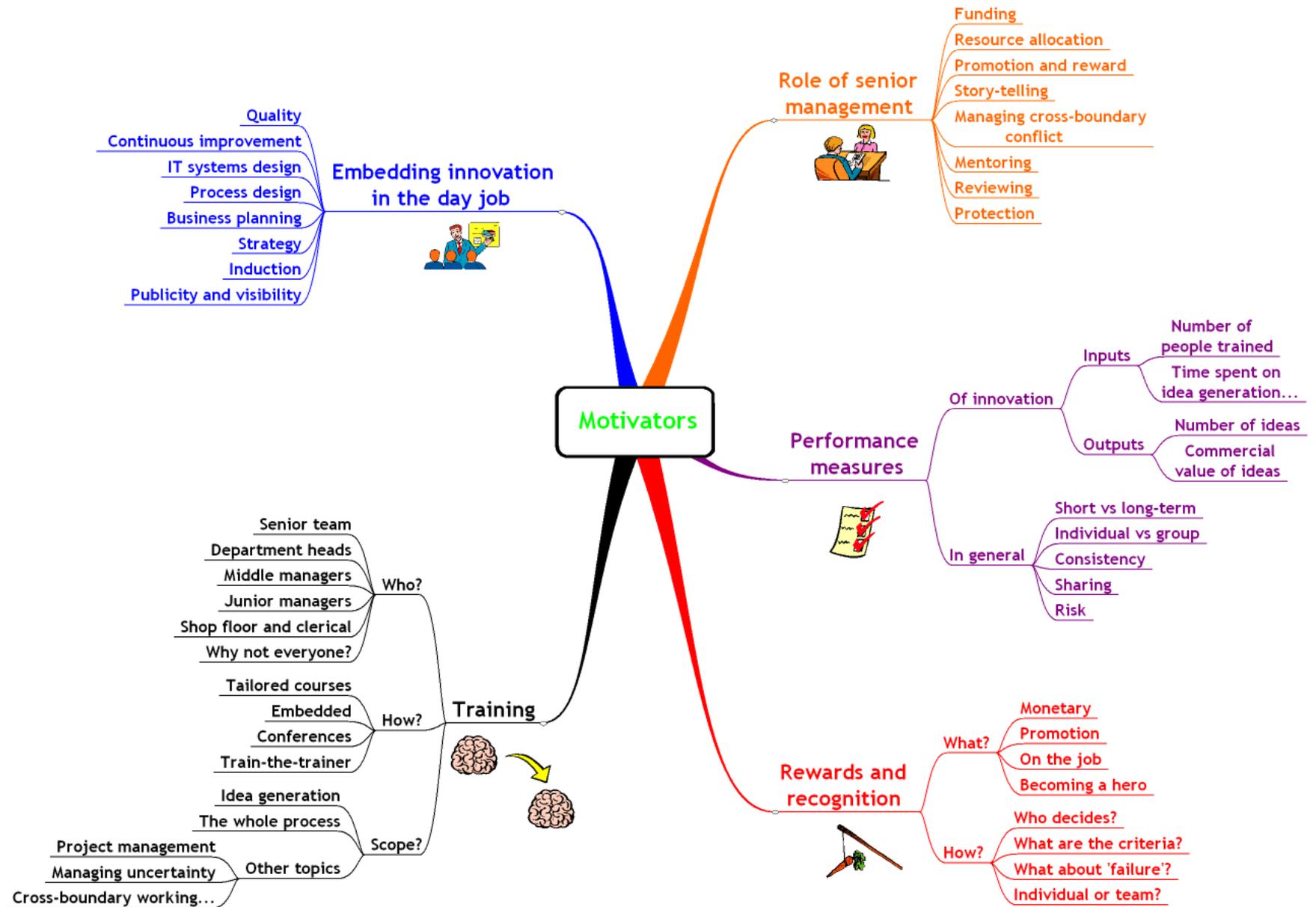
Motivators and enablers

The 'target diagram' shown on page 82 represents innovation as a deliberately managed organisational process. This process does not exist by itself, but sits alongside all the other organisational processes, and within the overall organisational culture. How does the organisational process of innovation interact with these other organisational processes, and the culture as a whole?
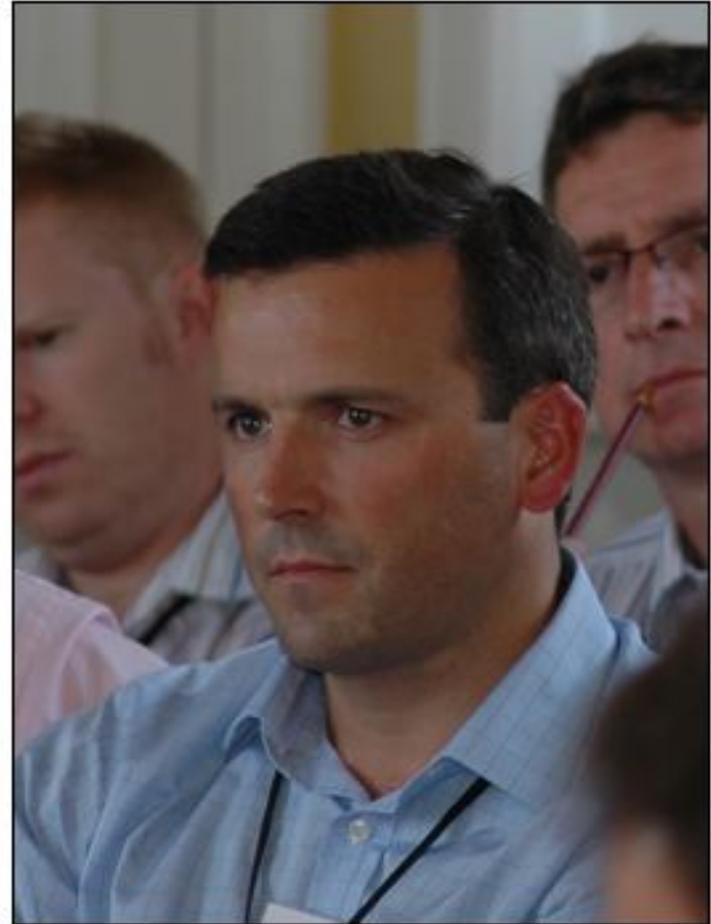
The answer to this question may be determined by recognising that 'culture' is the catch-all word for a host of individual and collective behaviours, behaviours driven by many of those other organisational systems such as the reward system, the budgeting system, the training system and all the rest. So even though the MD says "we need to be more innovative around here", if people aren't rewarded for having new ideas, if there are no budgets for developing ideas that weren't thought of when the budgets were determined, if people aren't trained in how to have ideas, then the MD can shout as loudly as she likes, but nothing will happen. All organisations, of course, have reward systems, budgeting systems, training systems. And so the big difference between the innovative organisation and the uninnovative one is that, in the innovative organisation, all the business's systems and processes have been deliberately designed to support and encourage creativity and innovation, whereas in the uninnovative organisation, those same systems thwart it. So, in the innovative organisation, the reward system recognises and acknowledges creativity; the budgeting system anticipates, and explicitly allows for, the fact (not just the likelihood) that all sorts of projects will arise during the year that were not precisely defined when the budgets were set; and everyone is trained in 'deliberate creativity' (see page 51), wise evaluation, and project management. And in the uninnovative organisation, those same systems stop innovation stone dead. Not because some malicious manager deliberately designed them to get in the way, but for the much more prosaic reason that no-one designed them deliberately to support it. Each of the systems of reward, budgeting, training and the rest were designed, with best intent, individually and separately, in the days when innovation wasn't on the agenda. So when innovation is on the agenda, and these systems remain unchanged, it's no surprise that nothing much happens.

To create an innovative culture, the key task is to align systems that, for the most part, already exist so they actively encourage creativity and innovation. In general, these systems fall into two categories: 'motivators', these being the systems that motivate people to be creative and innovative, and 'enablers', the systems which enable people to do it. Some check lists are shown on pages 84 and 85. In any organisation, these various systems can be quite quickly reviewed to determine which systems already support innovation, which are neutral (and so can be left alone in the short term), and which don't (and so need to be fixed). As a result, a series of well-defined projects can be designed and delivered which sensibly bring the systems into alignment. Do this, and the culture will follow. And innovation will start to happen.

Motivators

Embedding innovation in the day job
- Quality
- Continuous improvement
- IT systems design
- Process design
- Business planning
- Strategy
- Induction
- Publicity and visibility

Role of senior management
- Funding
- Resource allocation
- Promotion and reward
- Story-telling
- Managing cross-boundary conflict
- Mentoring
- Reviewing
- Protection

Performance measures
- Of innovation
  - Inputs
    - Number of people trained
    - Time spent on idea generation...
  - Outputs
    - Number of ideas
    - Commercial value of ideas
- In general
  - Short vs long-term
  - Individual vs group
  - Consistency
  - Sharing
  - Risk

Training
- Who?
  - Senior team
  - Department heads
  - Middle managers
  - Junior managers
  - Shop floor and clerical
  - Why not everyone?
- How?
  - Tailored courses
  - Embedded
  - Conferences
  - Train-the-trainer
- Scope?
  - Idea generation
  - The whole process
  - Other topics
    - Project management
    - Managing uncertainty
    - Cross-boundary working...

Rewards and recognition
- What?
  - Monetary
  - Promotion
  - On the job
  - Becoming a hero
- How?
  - Who decides?
  - What are the criteria?
  - What about 'failure'?
  - Individual or team?

Enablers

The pipeline
- Generating ideas
- Collecting ideas
- Sharing ideas
- Methods of evaluation
- Reviewing the stock-pile

Physical environment
- Open space
- Private space
- Communal space
- Who is near whom?
- Food and drink
- Access to outside
- Provision of technology

Culture
- Language
- Attitude to risk
- Attitude to challenge
- Cross-boundary sharing
- Line vs project
- Fear vs empowerment
- Attitude to 'failure'
- Willingness to listen
- Role of hierarchy and status

Budgets
- For what?
  - Training
  - Communication
  - Knowledge transfer
  - Idea generation
  - Idea evaluation
  - Idea development
  - Rewards
- How determined?
  - Power-play
  - Top-down
  - Bottom-up
  - Driven by strategy
- And what about?
  - Uncertainty
  - Risk
  - Serendipity

Managing the project
- The beginning
  - How is the team selected?
  - What training do they have?
  - Who is the leader?
  - To whom does the leader report?
  - Where is the team located?
- The middle
  - What are the milestones?
  - How is the project monitored and controlled?
  - How are risk and uncertainty managed?
- The end
  - What is success?
  - What are the criteria for implementation?
  - What causes the project to be cancelled?
  - How do we capture the learning?
  - What happens to the team at the end?

Funding
- Who holds the funds?
- How many sources of funds are there?
- How close is the funding to the idea?
- What information is required to support the funding decision?
- How quickly is the funding decision made?
- Who decides?
- What are the decision criteria?

Silver Bullet

Harnessing the power of the *BBC*

One particular aspect of organisational culture that can be immensely powerful in support of innovation is the way in which knowledge is shared. Innovation starts with idea generation, and ideas originate in one, and only one, place - the mind of a single human being. Only brains, and individual brains, can have ideas. But when two brains collaborate, something 'magic' can happen: an idea articulated by one person can be enriched by the second, and, as a result of the ensuing dialogue, an idea emerges which is far, far more powerful than the original raw concept, and far better than each individual would have had working in isolation. That's why we say "two brains are better than one", and "the whole is greater than the sum of its parts" - this being another example of emergence (see page 50).

So, if we accept that, in principle, when working together effectively, two brains are better than one, then this suggests that three brains are better than two. And four better than three. And, following this logic, in principle, *n+1* brains will be better than *n*. In fact, not just 'better', but a lot better - for if we assume that any individual brain has the 'creative capacity' of one 'unit', then the (theoretical) 'creative capacity' of *n* brains working effectively together is not simply *n*, but can be represented* as:

$$\text{Creative capacity of } n \text{ brains working together} = n + \alpha[2^n - (n+1)]$$

in which α represents the 'additional' creativity which arises when people work together effectively. If α is positive, as indeed must be the case if we believe that two brains are indeed better than one, then this expression increases *exponentially* as the number of people involved increases: that's the impact of the term 2^n. So the potential creativity of a 'brain bank' - the 'brain bank creativity', or *BBC* - is potentially huge, and a key argument that large organisations are inherently more creative than small ones.

But although most people are happy to go along with the concept that two brains are better than one, and maybe that three are better than two, few would agree that, say, ten brains are better than nine. Somewhere about the number five, our experience is that things just peter out: hence small organisations are inherently more innovative than large ones!

But therein lies the challenge. And the opportunity. If, as most people's experience bears true witness, two brains are better than one, and three better than two, what is going on to prevent this from happening at larger scales? What self-inflicted wound is stopping 10 brains being better than 9, and 100 better than 99? Surely this is a management and cultural problem that it is in our power to solve. And the organisation that does solve it will surely reap the benefits of harnessing the collective power of its brain bank creativity - nothing less than unassailable competitive advantage.

* This is a result of applying what mathematicians refer to as the binomial theorem: see pages 155 and 156 of *Smart Things to Know about Innovation and Creativity*, by Dennis Sherwood, published by Capstone (2001).

Feedback

Scores

	bad									good		average
	1	2	3	4	5	6	7	8	9	10		
The event overall						1		12	7	4		8.5
THE BIG DEBATE							7	6	4	4		8.2
The syndicate discussions						2	8	9	3	2		7.8
The syndicate share				1		3	7	10	2	1		7.5
The venue overall							2	4	9	9		9.0
The rooms						1	6	7	4	4		8.2
The dinner			1				2	6	7	6		8.5
Breakfast and lunch						1	4	10	3	6		8.4
Administration							1	3	9	10		9.2

The figures in each column represent the number of delegates scoring each item at the stated level.

What were the most enjoyable features of the conference?

- The venue - Clare College is stunning!
- Fantastic venue, very diverse group of generally 'high quality' delegates.
- Meeting the other delegates - what a fantastic bunch of creative, talented people!
- Some great discussions that were deeper than most conferences ever deliver.
- PY Gerbeau was great!
- The debate.
- The debate and the syndicate discussions.
- The contributions from the floor, inspired by excellent speakers!
- The depth of knowledge within the delegates.
- Meeting the other delegates.
- Making new contacts.
- Meeting people from different professions.
- The mix of people and the discussions.
- The interaction with other delegates.
- The one-to-one discussions with other delegates.
- The discussions over dinner.
- The discussions over dinner and lunch.
- The discussions, and company, at the evening meal.
- The inputs, discussions, and informal networking at the breaks were all very valuable.
- The opportunity to share similar experiences and challenges in different organisations.

- Listening to the experiences and insights of the delegates.
- Sharing ideas with similar-minded people, with a common interest in new product development and innovation, from so many different organisations in different sectors.
- The three presentations on the Wednesday morning - philosophy, science, and the arts.
- The three talks on the Wednesday.
- Hearing from real experts.
- Philosophy - the act of creation.
- I particularly enjoyed Alex Oliver.
- Dinah Casson's presentation was particularly inspiring.
- Dinah Casson's talk.
- Taking time out to think about innovation.
- The opportunity to take some time out to think.
- The syndicate discussions.
- The syndicate groups, and the informal discussions with others.
- The syndicate groups and the networking.
- The opportunity to discuss with others how a culture of innovation can be built within a business.
- The final discussion on organisational culture.
- Dennis Sherwood's brilliant presentational style: accessible, interesting, relevant.

And the least?

- The syndicate feedback - although some of the discussion this generated was off-beam, there were some interesting points.
- The syndicate feedback.
- The syndicate share - the problem is that out-of-context generalisations can often be correct on their own, but may conflict with each other.
- The syndicate feedback - length and time of day.
- The syndicate feedback was too long - and the room was too hot!
- The quality of the air conditioning!
- Dormant voices in syndicate.
- The syndicate discussion was so broad it was difficult to get a focused discussion.
- The syndicate discussion was poorly facilitated.
- The length of the final session on the Wednesday.
- Probably the references to Cambridge University, leaving a possible feeling of inferiority to those who didn't go there!
- The debate main speeches rambled a bit - but they were still fun.
- The debate was a bit long.
- The debate.
- Being seated for long periods of time without the opportunity to get up and discuss in smaller groups some of the points made.
- The duck at dinner!
- The walk to and from the car park!

To what extent has the conference helped you tackle some important issues for your organisation?

- The conference has been very powerful in enabling me, as a senior manager, to reflect on how I can engender and foster creativity.
- The conference was invaluable in helping highlight important issues for me and for my manager, at both the strategic and the tactical levels. I now have some great ideas for solutions.
- Not directly - but some powerful ideas to think on for the future.
- The 'target diagram' was useful - I will use that at a meeting tomorrow.
- Time will tell - I have certainly got some ideas to apply, and I think they will be helpful in tackling some important challenges.
- Good links with my organisation as regards informatics.
- Definitely helped to reinforce the importance of creativity and innovation to any organisation, and the need to communicate to innovate.
- Valuable time to reflect and listen to others' views so as to apply them to your own situation.
- Inspiration from the other participants.
- The conference has given me lots of ideas, and a process, to support the development of my innovator's role
- Some good ideas to take back to my organisation.

- The conference has provided good food for thought, and has helped me cement some plans.
- The conference has helped me see more clearly how to progress with my own organisational change.
- A good opportunity to look at the key principles of acknowledgement of talent.
- The conference framed problems in a context of other large businesses.
- It has helped - ideas from others facing similar situations.
- I've been given good ideas and thoughts to take back to my organisation.
- To some extent, but at this stage I need some time to digest lots of information.
- This needs reflection - and it will be achieved in many ways, with my coaching clients, when and as appropriate.
- This conference has helped me by improving and enhancing my understanding of some fundamentals in the creative process, and the issues that people from other organisations have to deal with. It will take me some time to digest what is new, and to relate this to my organisation.

What advice or recommendations would you offer for any future conferences?

- To continue the same variety of sectors and delegates.
- Keep the mix of professions and venue - it's unique.
- More time in syndicate discussions.
- Attract a wider group of ordinary folk.
- Limit the 'sit and listen' bit to $1\frac{1}{2}$ hours at most, and give a little more space for the gaps.
- Learning was mainly via the auditory channel - perhaps use the kinaesthetic and visual channels too.
- Possibly more opportunity for break-out sessions.
- Slightly longer breaks to allow more time for networking.
- Split the three sessions on the Wednesday morning to avoid numb bums!
- Why not do some *InnovAction!* on the conference itself. It's a great format, but like *Pop Idol* and *Big Brother* it could do with some new twists to keep it fresh.

- Could the debate be shorter to create more time for questions and answers to the speakers?
- The feedback from the floor after the debate should be less formal.
- More syndicate discussions.
- Look at giving more space and time to work up, and evaluate, ideas.
- An anatomy of a real-life success case, and a failure case, in context.
- The *BIG DEBATE* question should be better phrased to limit the opportunity for different interpretations.
- It was hard to see and read the syndicate flip-charts - a laptop projector would be better.
- Keep the very rich mix of people from a wide range of disciplines.
- Is it possible to encourage people to make their contact details available? I've met a lot of people, but have taken few business cards.
- Provide pencil sharpeners.
- Great venue - where next? Oxford?

Additional comments

- Thank you! What an exciting gathering of interesting and thinking people. There is hope for us all to change things for the better!
- The most important thing is the people - the conference attracted a fantastic set of people and I've thoroughly enjoyed meeting many of them.
- I really enjoyed the conference and really learnt from it. It has inspired me to really try to question and build on the way my organisation works.
- Many thanks - I must get a colleague to come next year.
- Generally this has been an excellent and stimulating opportunity - a very positive overall conference.
- I would have preferred the music before and after the meal rather than during it.
- Working in groups outside in the sunshine would have been lovely!
- It was very warm in the room - water in the room, at our seats, would have been good.
- I felt that there were too many people from R&D and academia relative to the remaining delegates.
- I found the conference very intellectual and academic - I struggled to respond to the conversation between academics and consultants. I would not attend a future event of this type unless I felt there was more of a peer group I could gain from.
- Possibly less of an academic bent to the conference and the discussions: if the objective was to look at public sector and business organisations, then they should be more central to the conference.
- An earlier start on the first day, and an earlier finish on the second would enable people to get home at a reasonable time, especially when needing to start work at 7 am on the next day.
- The great Toyota example was mentioned many times. This is something everyone knows about, and cannot disagree with - but many of us still have a problem in their real working context.

Silver Bullet

Idea generation, evaluation and development

Making innovation happen

Silver Bullet

Strategy development and scenario planning

The Silver Bullet Machine Manufacturing Company Limited

Innovation, Innovation, Innovation

Building high-performing teams

Barnsdale Grange, The Avenue, Exton, Rutland LE15 8AH
E-mail: dennis@silverbulletmachine.com
Website: www.silverbulletmachine.com
Mobile and messages: 07715-047947
Telephone: 01572-813690

Training and knowledge transfer

Conferences

Business and market modelling