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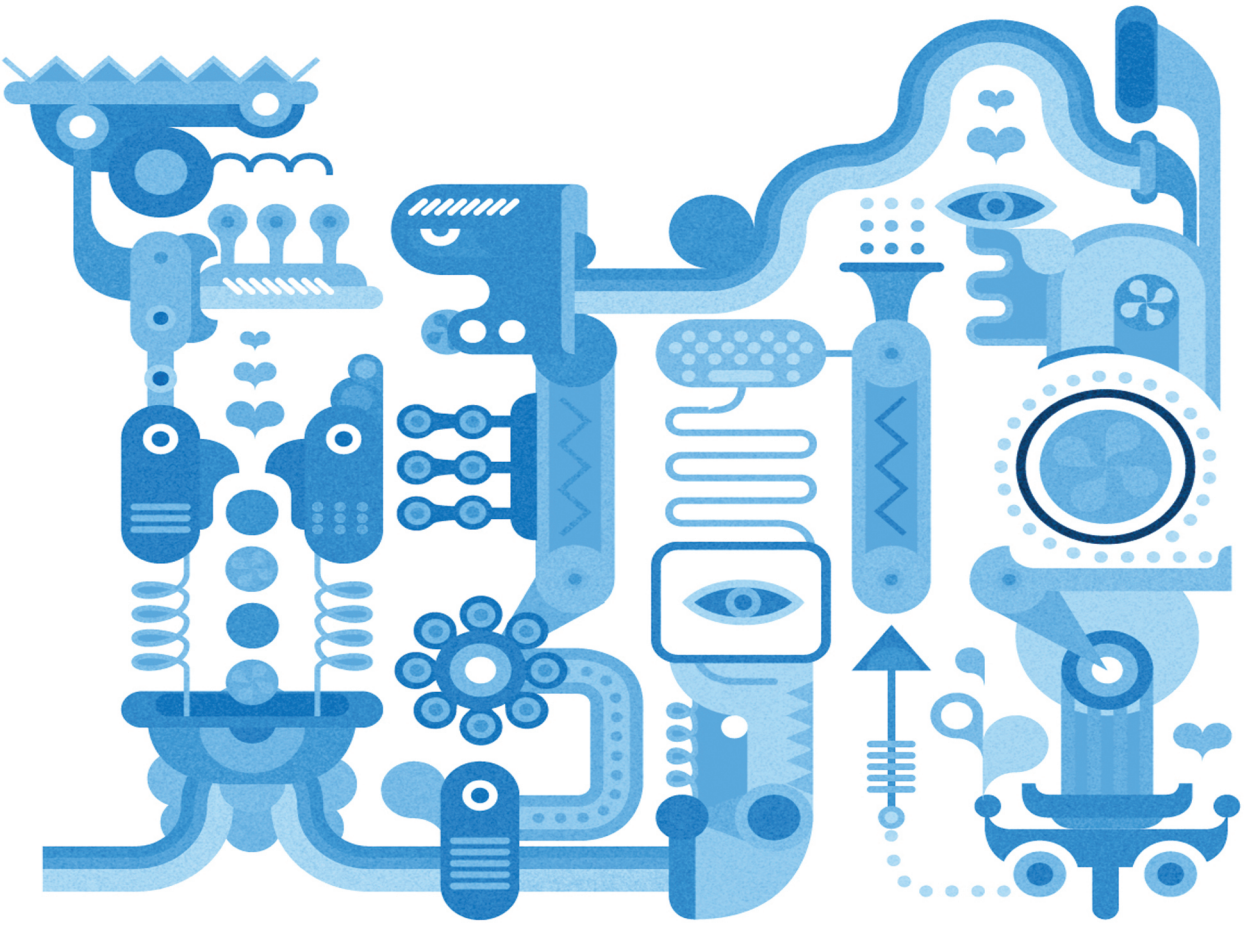
Making creativity and innovation happen



About this free course

This free course is an adapted extract from the Open University course BB842 *Sustainable creative management*.

This version of the content may include video, images and interactive content that may not be optimised for your device.

You can experience this free course as it was originally designed on OpenLearn, the home of free learning from The Open University – https://www.open.edu/openlearn/money-business/making-creativity-and-innovation-happen/content-section-0

There you'll also be able to track your progress via your activity record, which you can use to demonstrate your learning.

Contents

Introduction

Creativity and innovation address ways of doing things better and differently. This free course, *Making creativity and innovation happen*, focuses both on individual creativity – where it comes from and how it can be developed – and organisational creativity and the related concept of innovation. It considers how organisations can more effectively tackle the challenges posed by creativity and innovation in order to be more successful.

This OpenLearn course is an adapted extract from the Open University course **BB842 *Sustainable creative management*.**

Learning Outcomes

After studying this course, you should be able to:

- understand different perspectives on why creativity matters
- consider cognitive aspects of creativity and how personality and individual differences might contribute
- explore ways in which individuals can enhance their own creative potential
- appreciate how organisational factors such as culture, leadership, diversity and structure can both help and hinder creativity and innovation
- appreciate how organisations can be more strategic in their approach to creativity and innovation, including the use of creative swiping and other practices.

1 Understanding creativity and innovation

Like it or not, the world is changing – and changing fast. In many areas of life the old certainties are no more, and new solutions to old, new and future problems are needed.

To survive, organisations have had to become more responsive and flexible enough to react quickly to environmental changes. Moreover, in high-wage economies, they have had to become creative enough to add value through continual innovation. For this, organisations, more than ever before, are relying on the creativity and innovation of the people they work with, whether employees, contractors, or volunteers.

Next you will look at what the related, but quite distinct, concepts of creative and innovation mean in practice.

1.1 What is creativity?

Creativity is a key focus for organisations of all types, but what exactly is it?

Many people struggle with the notion of creativity, seeing it as the reserve of artists, musicians, poets and the like. Yet creativity is an innately human characteristic – everyone is creative even if you do not necessarily recognise or actively engage with that side of your personality.

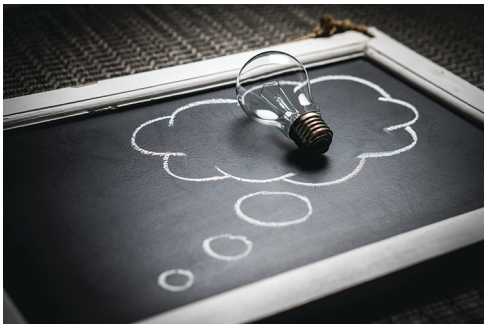


Figure 1 What makes you creative?

Bink and Marsh (2000) make the point that there are as many definitions of 'creativity' as there are researchers in the field. Nonetheless, in recent years a generally accepted definition of creativity has emerged. This holds that creativity is:

> the generation of novel and useful products within a specific context.
>
> (Bristol et al., 2013, p. xii).

These 'products' refer to everything from physical products to services, ideas, and processes, etc. Critically, however, the way that these 'products' are generated can vary substantially from context to context.

Activity 1 Are you creative?

Allow about 5 minutes

Do you consider yourself creative? Reflect on the times that you have solved a problem – at work, at home or elsewhere – by coming up with a creative solution. How did you do this?

Discussion

Everyone can be creative, but how and when you demonstrate that can vary greatly. An engineer grappling with a design challenge might be just as creative at those critical moments as an artist seeking to find a new way of expressing themselves. At its core, being creative is really just about solving problems – often in new, exciting and unexpected ways.

The following examples might help illustrate this.

- Joanne leads a team of civil engineers working on road-building projects around Europe. The job is highly complex owing to the existing infrastructure that she and her team must accommodate when building new roads or upgrading existing roads. Things such as bridges, drains, railway lines and electricity lines must be taken into account, not to mention the need to manage tight budgets and varying stakeholder requirements. Joanne describes her job as trying to complete a three-dimensional jigsaw without knowing what size or shape the pieces really are or what the end result is meant to look like. In that sense, her role involves not just problem solving, but also problem finding!
- John is an accountant working in the audit function of a large international firm. His role requires an excellent awareness of national and international regulations to ensure that the companies he audits are fully compliant at all times. John's life would be much easier if all businesses presented their accounts in exactly the same way, but sadly this is not the case. He needs to find novel solutions to deciphering the information presented by clients so that he is able to fully understand the data presented.

It is also important to note that the understanding of what is meant by creativity has changed considerably over time (Box 1).

Box 1 Changing definitions over time

Where once upon a time creativity was viewed as a gift of the gods, recent academic theories of creativity can be loosely associated with different decades. In the 1950s, creativity was often thought to be an ability possessed only by the gifted few; in the 1960s, it was associated more with the skill of mental flexibility that could be learned. In the 1970s, the role of relevant experience was more fully appreciated by researchers and in the 1980s attention was drawn to the key role of intrinsic motivation (doing things because you want to).

These theories focused on creativity at the level of the individual; however, more recently managers and researchers have turned their attention to the part played by the social context. In the 1990s, organisations paid more attention to the effect that work culture and environment have on the potential for creativity on people in organisations. In the current millennium the focus has shifted towards understanding creativity as an emergent

phenomenon that builds on what has gone before and arises from ongoing interactions, a perspective that considers the part social context plays in the genesis of ideas.

(Henry, 1994)

1.2 Defining innovation

How then should innovation be defined?

As with definitions of creativity, there are many understandings of innovation. While some are highly technical, others are focused more on the outcomes.

On an international level, the Oslo Manual – which includes guidelines for collecting and interpreting innovation data – specifies that:

> An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.
>
> (Statistical Office of the European Communities, 2005, p. 46)

While on a more technical level this definition might be suitable, a simpler and much more effective definition of innovation was suggested by Ekvall (1997) who asserted that at its simplest, innovation is really just:

> a creative idea that has been brought to application.
>
> (Ekvall, 1997, p. 195).

The 'creative idea' might involve inventing a new product or service, adapting an existing product or service or even simply just doing things in a unique and distinctive way.

Yet as both definitions of innovation highlight, just having a good idea is not in itself sufficient. For a creative idea to be classed as an innovation, it actually needs to be implemented or applied.

Next you will look at whether these definitions of creativity and innovation apply equally in all contexts.

1.3 Intercultural perspectives

In a world where English has emerged as the de facto lingua franca of business and places like Silicon Valley are the epicentre of innovation in their field, it is easy to forget that much creativity continues to happen in diverse cultural environments.

In the modern, globalised age it is tempting to focus solely on the common features different organisations or perhaps even different people share. This temptation is made all the worse by the fact that when people from different linguistic backgrounds meet there is at very least a good chance that they will communicate through the medium of English.

Despite this, a 2016 study by Vlad Gaveanu of the University of Aalborg in Denmark, together with advertising agency Crispin Porter + Bogusky, found quite distinct differences in how creativity is perceived and understood in different countries. Interviewing 806 people in eight different countries, the study found different views on where creativity

stems from between the countries. The three distinct views were that the basis of creativity was from:

- the creative genius who is gifted with specific insights
- creative individuals who see creativity as an individual pursuit, even if they are not necessarily as gifted with insights as a creative genius
- creative collaboration, which holds that creativity grows out of teamwork and collaboration.

While this research found some clear commonalities across cultures, it also identified some key differences – and punctured some of the prevailing myths of creativity:

> A dominant emphasis on the creative individual rather than creative collaboration is found primarily in the US (75.2%) and China (72%), a finding which belies China's collectivist heritage...
>
> The creative individual paradigm attracted more temperate support from the UK (57%), Russia (55.9%) and Germany (50%). Conversely, a stronger emphasis on creative collaboration as opposed to individuals is specific for Brazil (65.3%) and Turkey (69%). In India, both paradigms coexist and score very highly (73%). Interestingly, Indians also support the idea of the creative genius the most enthusiastically.
>
> (Crispin, Porter + Bogusky, 2016, p. 8)

These findings hint at the wide range of myths of creativity. While inevitably some are grounded in fact, others owe more to pop-psychology and mysticism than anything else. You will look at some of the common myths of creativity next.

1.4 The common myths of creativity

Think of the way in a which a 'genius', like the late Steve Jobs of Apple Inc., can come up with creative and innovative products in an apparently effortlessly manner, almost as though his talent was a unique and God-given gift. Is this really the case?

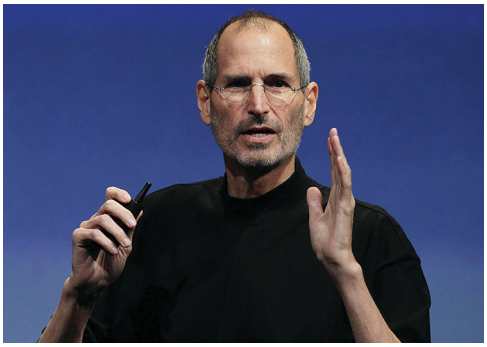


Figure 2 Steve Jobs

In his book *The Myths of Creativity* (2014), David Burkus effectively debunks ten of the most persistent perceptions of creativity. The ten myths Burkus discusses are outlined in Table 1 below.

Table 1 The ten myths of creativity

	Myth	Truth
Eureka myth	Creative insights happen in a flash.	The creative process requires a time of incubation, where ideas and relevant knowledge linger in the subconscious. Sometimes the ideas connect suddenly, seemingly in a flash, but more often the right connection takes some work after incubation.
Breed myth	Creative individuals are a certain type or breed.	There is no evidence supporting a creative gene or creative personality type. There is a wealth of evidence showing that creative potential is inside of everyone.
Originality myth	Creative ideas are or need to be wholly original concepts.	All ideas are new combinations of older ideas. The novelty comes from the combination or application, not the idea itself.
Expert myth	Innovative solutions are only found by highly trained experts.	Some level of expertise matters, but the most creative solutions come from those on the fringes of the subject area, who know enough to understand but not enough to block their creative thinking.
Incentive myth	Creative output correlates with incentives; the higher the incentives, the more creativity.	Creativity is highest when individuals are intrinsically motivated and incentives can actually dampen intrinsic motivation.
Lone creator myth	Great creative work happens in isolation, a lone individual slaving away at a problem.	Most breakthrough ideas come from teams formed out of the right network of collaborators.
Brainstorming myth	Creativity requires brainstorming to find great ideas.	Brainstorming is a good tool, but the creative process requires several stages.
Cohesive myth	The best creative teams are completely cohesive.	Outstandingly creative teams utilise structured conflict and dissent.
Constraints myth	Creativity is highest when totally free and unbounded.	Creativity loves constraints.
Mousetrap myth	If you have a great idea (‘build a better mousetrap’) the world will readily accept it.	Most great ideas are rejected at first.

(Adapted from: Burkus, 2015)

Activity 2 Exploring the myths of creativity

Allow about 5 minutes

Reflecting on your own experience of creativity and innovation, which myths of creativity do you think are the most prevalent? Why do you think this is the case?

Discussion

As David Burkus has indicated, there are many myths of creativity. At different points in your life you may have felt that some or all of these have merit, yet the reality is somewhat different!

In the next section you will explore the question of where creativity really comes from.

2 Where does creativity come from?

While it is important to understand what creativity is, it is just as critical to consider where creativity comes from. Your perceptions of where creativity comes from can have significant impacts on your personal beliefs about your own creativity and how it can be enhanced.

One of the most persistent myths of creativity insists that the left brain is fine-tuned for logic, structure and rationality, while the right brain delivers creativity's magic. The narrative has roots in research conducted in the 1960s, which helped the neuroscientist Roger W. Sperry to become joint winner of the 1981 Nobel Prize in Medicine.

The 'left brain/right brain' split may be helpful in simplifying some rather complex messages about brain functioning, but more recent neuroscientific research suggests that it does not stand up to scrutiny. Different stages in the creative process – analysing a problem, coming up with potential solutions, refining those solutions – use different neural networks and so draw upon different aspects of the brain.

Figure 3 Left brain, right brain or whole brain?

So where does creativity come from in the brain? In recent years, neuroscientists have been particularly successful at isolating certain elements of human behaviour and characteristics to specific parts of the brain. It is known, for example, that the Hippocampus is associated with memory and that the Dorsal Attention / Visuospatial Network is involved in viewing the outside world.

The problem is that the human brain is the most complex single entity in the known universe. To reduce aspects of human functioning to just one discrete element of the brain is both needlessly dismissive, but also incorrect.

Consequently, some of the key myths of popular psychology such as left brain vs right brain are basically incorrect (Yoruk and Runco, 2014). As psychologist Scott Barry Kaufman explains:

> *Creativity does not involve a single brain region or single side of the brain.*
>
> Instead, the entire creative process – from preparation to incubation to illumination to verification – consists of many interacting cognitive processes (both conscious and unconscious) and emotions. Depending on the stage of the creative process, and *what* you're actually attempting to create, different brain regions are recruited to handle the task.

> Importantly, many of these brain regions work as a team to get the job done, and many *recruit structures from both the left and right side of the brain*.
>
> (Kaufman, 2013, original emphasis)

This final assertion that creativity recruits structures from the left and right side of the brain builds upon recent work which has tended to highlight the functioning of networks in the brain and their interactions (Bressler and Mennon, 2010, p. 277).

Ultimately, creativity requires a whole brain approach and instead of asserting that it originates in one part of the brain people need to give themselves more credit and recognise the more diverse nature of creativity in practice!

2.1 The power of intuition

For many people in organisations, the feeling of being overwhelmed by too many projects, too many objectives and fast-moving ambiguity is all too familiar. Your world may feel complex, messy and ill-structured. The information you need is incomplete, the time required to make decisions is limited and the outcome of the decision is uncertain. People may have hopelessly unrealistic expectations about how long tasks will take and there might be an ever-present pressure to act before a complete picture is available. You may find yourself engaged in an intuitive mode of executive action where 'thinking' is inseparable from 'acting'.

In this situation, building on your experience and accumulated expertise, your unconscious may allow you to conjure effective ways of doing things before you have conscious experience of what you are doing, leading to creative and unexpected outcomes.

In his 2011 work, *Thinking, Fast and Slow*, the Nobel Prize Winner Daniel Kahneman distinguished between System 1 and System 2 thinking:

- System 1 operates automatically and quickly, with little or no effort and no sense of voluntary control
- System 2 allocates attention to the effortful mental activities that demand it, including complex computations

(Kahneman, 2011, pp.20–21)

Figure 4 Daniel Kahneman

System 1, in other words, is your intuition at work. Connson Chou Locke (2015) argues that intuition is most effective when three conditions apply:

- when you have expertise in any given situation, allowing you to draw upon knowledge that you have developed over the years
- when the problem is unstructured: 'An unstructured problem is one that lacks clear decision rules or has few objective criteria with which to make the decision'
- when you don't have the time for detailed analysis.

Managers must take notice when intuition calls. Good judgement depends on being able to recognise the things you didn't know you were looking for.

2.2 Recognising intuition

Intuition involves knowing what to do when there are no rules or instructions that tell you what to do, which can sometimes be the case when you are attempting to find creative solutions. While systems and processes in which artificial intelligence mimics the role played by experts may be invaluable in certain circumstances, when they must leap from what programmes and algorithms predict to something previously unimagined they are less so. Intuition may allow humans to make these logical leaps.

Many managers may be happy to admit – in private, at least – that they rely on their intuition to make strategic decisions about where to go and how to get there. When these things have been decided, it may be easier to find supporting evidence. If you look hard and select carefully, the evidence for your evidence-based decision might be incontrovertible. As the author Robert A. Heinlein pointed out: '[A hu]man is not a rational animal; he is a rationalizing animal' (Heinlein, 2000).

2.3 Might intuition lead you astray?

You need intuition to help you leap from what you know to what you do not know, but an unwarranted belief in the power of intuition could lead you astray. You might be right when everyone else is wrong; but you may do well to consider other people's points of view. If those who know you well disagree, listening to them could help you learn.

Reflecting allows your mind to stand still for a moment and reassess the problems. Intuition is fallible and there are reasons to be cautious.

Psychologists Simons and Chabris argue that you should:

> Be wary of your intuitions, especially intuitions about how your own mind works. Our mental systems for rapid cognition excel at solving the problems they evolved to solve, but our cultures, societies, and technologies today are much more complex than those of our ancestors. In many cases intuition is poorly adapted to solving problems in the modern world. Think twice before you decide to trust intuition over rational analysis, especially in important matters, and watch out for people who tell you intuition can be a panacea for decision-making ills.
>
> (Simons and Chabris, 2010, p. 241)

If human intuition is important for creativity and creative decision making yet is also innately fallible, perhaps the answer is taking a more 'data-driven' approach. This might involve consciously stepping away from your intuition and using the available data and

evidence to support your conclusions, including the use of Big Data and Artificial Intelligence (AI).

2.4 The role of imagination

Children often express their imagination through play. While this in itself is an important opportunity for creative expression, more importantly ‘pretend play in childhood is where many of the cognitive and affective processes important in creativity occur’ (Russ, 2014, cited in Kaufman and Gregoire, 2015, p. 8).

Figure 5 A child playing make believe

As adults it is easy to be drawn away to the world of being serious and attending to more ‘grown-up matters’. Even when you do access your imagination it can often be through the lens of someone else’s thought as you read a book, or watch a film or television programme. Yet for adults, imagination is arguably important for ‘even the most minimally creative thought’ (Stokes, 2017, p. 158).

Activity 3 Creativity and imagination

Allow about 15 minutes

Watch this video clip discussing the importance of imagination as a source of creativity. As you are watching, reflect on the way you access your imagination on a daily basis

Video content is not available in this format.

Discussion

As Scott Barry Kaufman suggests, imagination and a ‘messy mind’ are key to creativity. Allowing yourself to access your imagination might just help enhance your creativity. For example, doing so might allow you to imagine new ways of addressing challenges or solving problems. Taking a ‘child-like’ perspective and letting your imagination run free could help you combine different approaches or look beyond the obvious, much in the same way you might if you were mapping different scenarios for a project.

Think of the early days of space exploration: as no-one had actually been on the moon, the scientists who developed spacecraft and other equipment for early missions had no choice but to build upon their scant scientific observations to imagine the potential challenges that might be encountered.

In the next section you will take a look at some steps you can take to enhance your personal creativity.

3 Enhancing your creative confidence

> Creative confidence: having the freedom and courage to fail/take creative risks and the knowledge that all of the ideas you create have value.
>
> (Grossman-Kahn, 2013)

It is one thing to recognise that everyone has the *potential* to be creative… it is another thing altogether to have the confidence to unleash that creativity and allow yourself to find your ultimate creative expression. While training and the knowledge of skills and techniques are important, by themselves they are not enough. For creativity to emerge it is critical that you have the necessary confidence in your own creative capacity.

Tom and David Kelley, brothers and pivotal figures in the renowned design and innovation company IDEO, argue that:

> Most people are born creative. As children, we revel in imaginary play, ask outlandish questions, draw blobs and call them dinosaurs. But over time, because of socialization and formal education, a lot of us start to stifle those impulses. We learn to be warier of judgment, more cautious, more analytical. The world seems to divide into 'creatives' and 'noncreatives,' and too many people consciously or unconsciously resign themselves to the latter category.
>
> (Kelley and Kelley, 2012, p.115)

Figure 6 Tom Kelley and David Kelley

A key problem, Tom and David Kelley assert, is that people can be held back by fear in different forms:

- fear of the unknown
- fear of being judged
- fear of the first step
- fear of losing control.

In order to be more creative, the challenge is to overcome those fears and become more confident in your own creativity.

Activity 4 What is creative confidence?

Allow about 15 minutes

Watch this video of Tom Kelley from IDEO discuss the concept of creative confidence and why it is important. As you are watching, reflect on your own creative confidence and how it might be developed.

Video content is not available in this format.

Discussion

In order to be creative you must have confidence – but not just any confidence, *creative confidence*! Tom Kelley makes a strong argument for everyone to recognise and develop their own creative confidence. Doing so might just be the difference between (creative) success and failure.

So how might you enhance your creative confidence? A key is to address those fears that might be holding you back. If you are able to understand and overcome those, you are well on the way to creative success

Next you will consider the idea of assumptions and how they can, if not challenged, sometimes stifle creativity.

3.1 Do you need to challenge your assumptions?

> Assumptions are dangerous things.
>
> Agatha Christie

Assumptions and taken-for granted beliefs have the potential to derail thinking. For example, you might not question the givens or dare to speak up and you might assume that other – ostensibly wiser – people have the answers or perhaps are better equipped to make decisions than you. Yet this is not always the case and can, in fact, lead you to undermine your creativity and settle for second best.

Sometimes, however, it is not just bad ideas that can sabotage your thinking. The ideas themselves might be quite worthwhile but they might not be universally applicable. A bad idea in one place is not necessarily a bad idea in another. What might not work or potentially be harmful in one context might actually be helpful in another.

3.2 Will ‘creativity training’ make you more creative?

Training is a common solution to many perceived skill gaps. But can specific training interventions help make you – or anyone for that matter – more creative?

Figure 7 Can training make you more creative?

In a study looking at creativity training, Perry and Karpova (2017) initially found that the training can actually make some people *less* creative. However, when looking a little closer they eventually concluded that – while creativity is difficult to measure – if tailored to a person’s specific needs creativity training can in fact be beneficial. Such creativity training might include an introduction to useful creativity techniques such as brainstorming or De Bono’s 6 Thinking Hats (a technique which involves putting on metaphorical ‘thinking hats’ in order to see problems from different perspectives). Alternatively it might be more experiential through the use and application to real-world problems of detailed processes such as Design Thinking (a comprehensive creative problem solving process which involved working through a challenge starting with the perspective of the end-user or customer).

In essence, training to enhance creativity can and does work, however it must be the right type of training delivered in the right manner, supported by a work environment which facilitates the use of new methods, techniques and ideas. If this is the case, then creativity training can be a valuable investment.

In the next section you will look at how, perhaps paradoxically, both failure and constraints can be critical for creativity.

4 Failure and constraints

How you cope with setbacks and how you view failure shapes the way you deal with future difficulties. By recognising that failure and learning are normal aspects of creativity and innovation you can begin to understand how people involved in creative processes might make the best of failure and consequently do better next time.

Think of it this way: sometimes you have to do things wrong before you learn how to do things right. Seeing failure as an opportunity to learn can pave the way for future success.

When a child starts to learn how to walk, they stumble and fall repeatedly until they succeed through repeated attempts and a process of adaptation and adjustment. As adults though, you tend to be extraordinarily eager to eliminate or hide errors even when learning – which overlooks an important learning opportunity: errors can teach you what *not* to do.

Figure 8 Failure and success

While the notion of failure might strike fear into the hearts of many, the reality is that at some point everyone fails. Whether it be a project that doesn't quite work out, a promotion you miss out on or perhaps even a challenge that you don't quite manage to overcome, failure is an inevitable part of life.

Yet for both leaders and organisations, the real challenge lies not in avoiding failure but in ensuring that when failure does occur it is managed intelligently and that lessons – positive, negative and otherwise – are learned. Because after all, failure is a critical part of eventual success and innovation. As Steve Levitt of Freakonomics argues:

> To be willing to accept failure, you have to have self-confidence... you have to be accepting of the idea that failing isn't, doesn't define who you are. Failing

gets something out of the way that keeps you from finding the thing that you're actually going to be good at.

(Freakonomics, 2014)

Activity 5 Have you ever failed?

Allow about 5 minutes

Take a moment to reflect on a time when you have failed. What were you able to learn from this experience and how has this helped you in future situations?

Discussion

Have you ever failed? Chances are that you have, or at least that things have not always worked out precisely as you had intended. The key is not to avoid failure but rather to make it manageable and to learn from it.

The renowned inventor of the cyclonic vacuum, James Dyson, once remarked that 'I built 5127 prototypes before I got it right' (Raz 2018). While in each case Dyson might arguably have failed, by taking measured incremental steps and learning from each one he was eventually able to perfect his innovative new vacuum cleaner.

4.1 Boundless freedom isn't always helpful

Just as failure can be good for creativity, so too can constraints and limits. Despite a perception that starting with a 'blank page' – whether literal or metaphorical – is always beneficial, this is not necessarily the case.

Figure 9 Is a blank page helpful for creativity?

Neither boundless freedom nor boundless choice are conducive to creativity and innovation, but can in fact have the opposite effect. Indeed, boundless choice might leave people paralysed or indeed create the conditions for failure to occur by removing the necessary framework within which you are able to make decisions.

Completing projects successfully depends on making choices. If you do not exclude options that might take you in unhelpful directions, you cannot hope to get where you would want to be. If it led to unwarranted procrastination, boundless freedom would also not be an advantage.

4.2 When constraints are unavoidable

In some situations constraints simply cannot be avoided. They might, in fact, be inherent in the environment or situation and implicitly require that creative and innovative solutions address them effectively. For example, if you are living in a very cold climate a creative housing solution will most likely be quite different to one found in a very hot climate, as in both situations you would be both constrained by and guided by the requirements of the situation.

When NASA scientists were developing vehicles for use on the moon, they had to rethink what you might take for granted about wheels. Through a process of trial and error and by learning from the constraints imposed upon by them by the extreme context and its requirements, NASA scientists were ultimately able to develop a hugely creative solution – the Superelastic Tire.

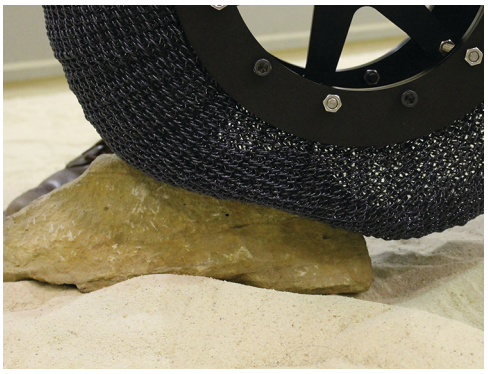


Figure 10 Superelastice tires

Superelastic Tires better meet the needs of vehicles designed for use on the Moon, Mars and in other extreme conditions because the tyres are:

- safe: eliminates the possibility of puncture failure
- strong: can withstand excessive deformation
- robust: can be configured for high traction on various terrains
- simple: eliminates the need for air
- versatile: tire stiffness can be designed to limit energy transferred to vehicle
- lightweight: no inner frame needed for the tire/wheel assembly.

(NASA, n.d.)

NASA's capacity to be creative in the face of non-negotiable constraints led to the development of a radically different type of tyre. It is not hard to imagine that in the absence of the constraints imposed upon NASA by the rigorous conditions encountered in space this incredibly creative and innovative solution would never have happened!

4.3 The importance of changing mindsets

The key to working effectively with both failure and constraints is your mindset.

Changing mindsets is a critical challenge when seeking to enhance awareness, understanding and acceptance of failure – both individually and within organisations. Living life – whether personally or within an organisation – too cautiously can lead to

failure by default. Changing mindsets is key to overcoming this and dealing effectively with failure in order to support greater learning, creativity and innovation in organisations.

In their article, *Changing Mindsets in Organisations, One Brain at a Time*, Knell and O'Mara (2017) explore the way that growth mindsets – a concept first developed by American psychologist Carol Dweck (2017) – can help both individuals and organisations deal with challenges and adversity more effectively:

> Your mind-set is the characteristic way you face challenges and adversity: as opportunities to learn and grow, even from failure (a 'growth' or 'incremental' mind-set), or by retreating to safety, and being wary of failure (a fixed 'mind-set'). Mind-sets manifest themselves in how you talk to yourself ('I can't do that, because…' or 'I'd like to try that, because…'), and in your behaviour (going forward to the challenge, with a determination to learn), or avoiding the challenge because of fears about the stigma of failure. Mind-sets manifest themselves in underlying changes in brain function: growth mind-sets have a brain signature which reflects greater use of all the brain's resources, relative to the fixed mindset.
>
> (Knell and O'Mara, 2017, p.10)

Your mindset – and specifically a growth mindset – is consequently of critical importance when approaching working with failure. Given that both failure and constraints are an inevitable part of life, the real challenge lies not in avoiding them but in working with them to ensure the best possible outcome. Key to these is the development of what American psychologist, Carol Dweck, called a growth mindset. Thinking a little differently may make a lot of difference to your creative potential.

Box 2 The paradox of choice

When it comes to creativity and innovation the interplay between choice and constraints is quite subtle yet very important. In this podcast, Laurence Knell of the Open University discusses the Paradox of Choice and the way in which constraints can guide and support our creativity and innovative thinking.

Audio content is not available in this format.
Audio 1 The paradox of choice – failure and constraints

In the next session we will consider how you can improve your problem solving and critical thinking skills.

5 Problem solving and critical thinking

Day-to-day you are constantly solving problems. These might range from the mundane – 'do I really want another cup of coffee?' – to the significant and consequential – 'is this the right person for me to hire?'.

Yet how often do you reflect on your approach to solving problems?

Figure 11 Problem-solving

The word '*problem*' often describes things you don't want to do or difficulties that you could easily overcome.

The problem with problems is that they can be difficult to separate from other things. It may be difficult to see where a problem stops and everything else starts, or to disentangle a problem from its context. You then have to consider that seemingly trivial problems may be symptoms of more serious problems.

Understanding the nature of the problem is always a good place to start when problem-solving. Keith Grint argued that 'Tame Problems are akin to puzzles' (Grint, 2008, p. 12) as you might be familiar with puzzles and know what to do and you may have a clear sense of what's important and can anticipate how your changes will affect other things without being too surprised too often. There is, in other words, 'only a limited degree of uncertainty' (Grint, 2008, p. 12).

Unlike tame problems, however, wicked problems are less readily resolved (Rittel, 1972). Mason and Mitroff (1981) describe wicked problems as uncertain, complicated, interconnected and ambiguous issues within which there are competing claims and societal constraints. Working with wicked problems places a premium on communicating effectively with those who can help you understand the latest developments. Having the

flexibility to accommodate unexpected developments is also needed when dealing with wicked problems.

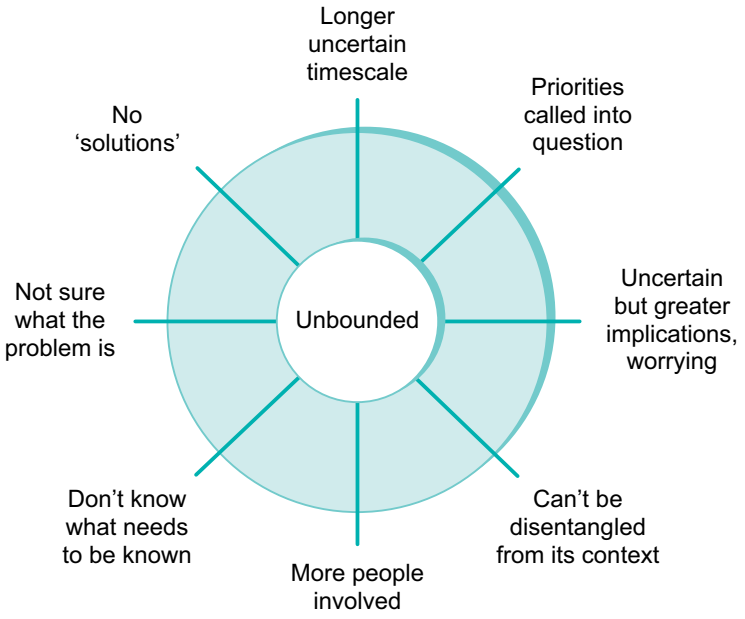


Figure 12 Aspects of wicked problems

Wicked problems are both deeply intertwined with their context and unbounded. Consequently, if you act decisively, you may trigger unanticipated consequences and create fresh problems. Today's world is increasingly interconnected and as a result it can be harder to separate a wicked problem, such as eliminating poverty or achieving world peace, from myriad other interrelated problems.

In order to come up with suitable and effective creative solutions you must focus just as much on understanding the problem and its context as you do the potential solution.

Effective problem solving may involve separating wicked problems, where you must be open minded and agile, from tamer problems that might be easier to solve.

Leaders and managers may catch people's attention with new solutions to old problems. Yet old problems can persist: wicked problems cannot be tamed; and many apparently tame problems may be less-tame than they first appear.

Activity 6 Tame or wicked?

Allow about 10 minutes

Think of all the problems that you deal with on a daily basis: are they tame or wicked? Based on whether you believe them to be tame or wicked problems, how might you approach them differently?

Discussion

As you have seen, tame and wicked problems require different approaches. Understanding the nature of the challenge you are dealing with can help you be more effective in how you approach problem solving.

5.1 The power of critical thinking

Critical thinking is 'the ability to thoughtfully analyse and evaluate situations and recommend courses of action that consider stakeholders, implications and consequences (Eggers et al., 2017, p. 266)

Thinking critically involves considering a subject, content or problem diagnostically, identifying opportunities and developing, testing and implementing appropriate solutions. Taken for granted assumptions must be challenged and should lead you to asking searching questions that may have no simple answer, such as:

- What is the problem?
- Where is the opportunity?
- Why has nothing been done?
- What should be done?

Identifying what you want to think critically about may require creativity. Critical thinking may also involve daring to be different in your approach to a problem or an opportunity, and – importantly – thinking for yourself. This can involve questioning strongly held beliefs and ideas even when they might be considered to be virtually sacred or untouchable by others. It can also mean considering the arguments from various perspectives and sources, even if you might not intuitively agree with them.

Challenging the status quo could help critical thinkers create new and more advantageous ways of doing things. The World Economic Future of Jobs Report (WEF, 2016) highlights critical thinking as tomorrow's key job skill, a point further underlined by Hess (2017) when he argues that in a world where technology and artificial intelligence (AI) are increasingly important:

> Many experts believe that human beings will still be needed to do the jobs that require higher order critical, creative, and innovative thinking and the jobs that require high emotional engagement to meet the needs of other human beings. The challenge for many of us is that we do not excel at those skills because of our natural cognitive and emotional proclivities: we are confirmation-seeking thinkers and ego affirmation-seeking defensive reasoners. We will need to overcome those proclivities in order to take our thinking, listening, relating, and collaborating skills to a much higher level.
>
> (Hess, 2017)

Box 3 Is critical thinking the same as intelligence?

While critical thinking involves the intelligent application of thoughts, it is not the same as intelligence. Butler et al. (2017, p. 38) make the point that 'We all probably know someone who is very intelligent, but does blatantly stupid things. Despite evidence that intelligence predicts a variety of life outcomes, the relationship between intelligence and good thinking is less clear'. They further argue that 'critical thinking involves thinking rationally in a goal-oriented fashion… It is a collection of skills and strategies that a thinker can use when the situation calls for them. It is also a disposition towards thinking careful and thoughtfully' (2017, p. 39).

So what is the link between creative thinking and critical thinking? Are they related or perhaps completely different phenomena?

5.2 Creative thinking and critical thinking

While some might argue that the process of critical thinking helps to stimulate creative thinking (Eggers et al., 2017), others are quite clear that creative thinking and critical thinking are distinctly separate phenomenon which nonetheless share a common focus on decision making (Wechsler et al., 2018).

Paul and Elder make the case for a close link between the two as follows:

> To the untutored, creative and critical thinking often seem to be opposite forms of thought: the first based on irrational or unconscious forces, the second on rational and conscious processes; the first undirectable and unteachable, the second directable and teachable….
>
> Critical and creative thought are both achievements of thought. Creativity masters a process of making or producing, criticality a process of assessing or judging. The very definition of the word creative implies a critical component (e.g. having or showing imagination and artistic or intellectual inventiveness). When engaged in high-quality thought, the mind must simultaneously produce and assess, generate and judge the products it fabricates. In short, sound thinking requires both imagination and intellectual standards.
>
> (2006, p. 34)

They conclude by asserting that both forms of thought are inherently linked, arguing quite strongly that ‘Critical thinking without creativity reduces to mere skepticism and negativity, and creativity without critical thought reduces to mere novelty’ (2006, p. 35).

Figure 13 Critical or creative thinking?

Creativity is consequently necessary for critical thinking, but in itself not sufficient to guarantee that it will occur. Creative people may bubble with ideas but to successfully get things done they must engage in *problem finding* – ‘a thinking activity that utilizes existing contexts and experience to produce and express new questions’ (Jia et al., 2017, p. 86).

Needless to say, critical thinking is not easy, and the pressure of time, something that many experience, can enhance this challenge. Sostrin (2017) argues that: ‘An unbridled urgency can be counterproductive and costly. If you’re too quick to react, you can end up with short-sighted decisions or superficial solutions, neglecting underlying causes and create collateral damage in the process.’

While problem solving is in many ways a natural human activity, if you reflect further you might recognise that effective problem solving is much harder. An important first step can be understanding the nature of the problem you are trying to solve and the full complexities it entails. Taking a more critical approach to problem solving can help you address them in new and productive ways.

In the next section you will take a step beyond the individual and look at the challenge of creativity and innovation in organisations.

6 Creativity and innovation in organisations

While some might see creativity as an individual activity, the reality is that most creativity and innovation happens in teams and organisations.

When people talk about creativity and innovation in organisations, they often mention culture. If well-motivated people have expertise, culture may give their creative thinking scope to flourish. Cultivating a creativity-friendly culture may create more choices.

Yet you may not be able to pursue every choice, and choosing between options – picking winners – can be far from straightforward.

Killing your favourite ideas can be painful. If subsequent events reveal that you killed a winner, the loss may be even harder to bear. If an organisation's culture kills creativity without good reason, the consequences could be catastrophic.

While certain elements of an organisation's culture – defined at its simplest as 'the way we do things around here' (Deal and Kennedy, 1982) – might be formalised, an informal atmosphere that encourages communication and networking is also important. The culture should be one in which people feel listened to and where time to explore ideas is allowed, if not actively encouraged. In addition to facilitating open communication, the organisation needs to be outward-looking to keep abreast of changes.

Figure 14 An informal work team

Activity 7 Building a culture that stimulates collective genius

Allow about 15 minutes

In the following video at the link below, Harvard professor Linda Hill discusses the key elements of a culture that stimulates 'collective genius':

While watching, think of an organisation you know well. How many of the elements highlighted by Linda Hill in the video are present? Does this fit with your perception of how creative the organisation is?

Video: Building a culture that stimulates collective genius

Discussion

The degree to which an organisation is creative can vary considerably. By understanding the key elements highlighted by Linda Hill you can start to understand why some organisations are more creative and innovative than others.

6.1 How can creativity thrive?

Renowned management thinker Charles Handy (1991) long-ago recognised four factors that can combine to create a creative climate:

- Curiosity – to fuel a continual desire to explore, enquire, experiment, probe, challenge and try to understand.
- Forgiveness – curiosity will be stifled unless there is acceptance of the blind alleys that are part of all exploration.
- Love – genuinely valuing the people around you and the context you work in, so as to provide the emotional space and security for confident exploration and learning.
- Direction – a sense that the totality of the work is moving in a constructive and desired direction.

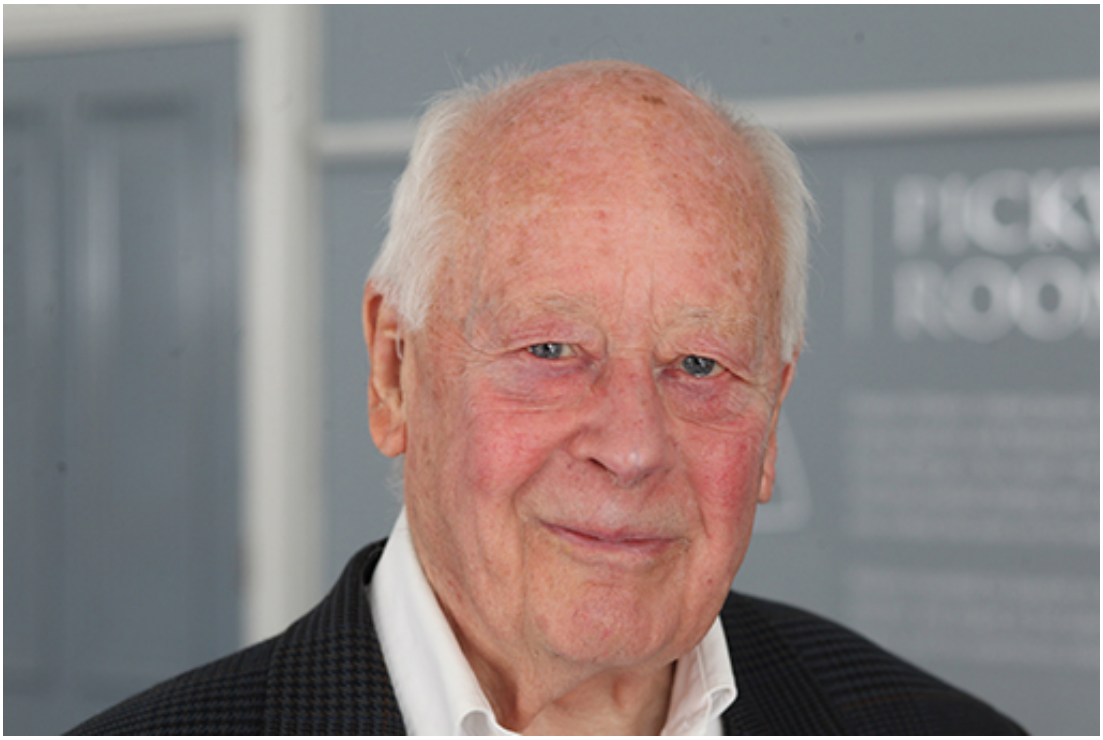


Figure 15 Charles Handy

If you are curious, forgiving, loving and directed, creativity may surge. If not, and you settle into a life that is too comfortable to change, you may be caught out when you find that other people have moved on without you.

Adversity can also force you to rethink taken-for-granted assumptions and encourage creativity. If critics can show you where you are going wrong or provide you with more convincing alternatives, you may want to learn more. There's no guarantee that what they say will be useful but, if you do not listen, you cannot hope to learn.

Next you will look at one approach to developing new ideas, known as creative swiping.

6.2 Creative swiping

Creativity in organisations requires more than just a supportive culture… it also needs ideas. But where should ideas come from?

One approach for developing and finding new ideas is creative swiping, first suggested by Tom Peters (1987).

Creative swiping involves recognising the potential in other people's ideas and learning how to adapt and enhance those ideas in ways that allow you to do things in more advantageous and sustainable ways. Critically, creative swiping is *not* a licence to plagiarise, defraud or produce counterfeit merchandise by pretending that something you stole from someone else is your work. Peters himself expresses the concept as follows:

> Put NIH (Not Invented Here) behind you – and learn to copy (with unique adaptation/enhancement) from the best! Do so by aggressively seeking out the knowledge of competitors (small and overseas, not just tired old foes) and interesting noncompetitors.
>
> Become a 'learning organization.' Shuck your arrogance – 'if it isn't our idea, it can't be that good' – and become a determined copycat/adapter/enhancer.
>
> (Peters, 1987, p. 228)

Simply copying a competitor today precludes creating your own unique basis for advantage. Peters was clear that success depends on doing something unique, and creative swiping, which amounts to adapting ideas from unconventional sources, aims solely at creating uniqueness.

More than that, however, innovation depends on translating creative ideas into commercially viable ways of doing things. Next you will look at how you can capitalise on your organisation's creativity.

6.3 Capitalising on creativity

Your smart unconscious may help you leap to previously unimagined ideas, but deciding which ideas to develop can be difficult.

In his bestselling book *Give and Take*, Adam Grant suggests that there's an often-overlooked element in what makes successful people successful.

> According to conventional wisdom, highly successful people have three things in common: motivation, ability, and opportunity. If we want to succeed, we need a combination of hard work, talent, and luck.
>
> (Grant, 2013, p. 4)

Yet Grant's research into reciprocity drew attention to a fourth ingredient: interaction with other people. You might be motivated, able and lucky – but making desirable differences depends on other people lending you their intelligent cooperation. In this sense it is critical to recognise that both leaders and followers need each other – their common interests make them allies and bind them together.

Consequently, to succeed you need:

- motivation

- ability
- opportunity
- relationships with those who might help you do things better.

So far you have looked at how creativity can thrive in an organisation, however it is also important to recognise what can damage and stifle creativity. You will look at this next.

6.4 Killing creativity

There are certain behaviours that can stifle creativity. Teresa Amabile (1998) elaborates on some of the ways organisations kill creativity:

> When I consider all the organizations I have studied and worked with over the past 22 years, there can be no doubt: creativity gets killed much more often than it gets supported. For the most part, this isn't because managers have a vendetta against creativity. On the contrary, most believe in the value of new and useful ideas. However, creativity is undermined unintentionally every day in work environments that were established – for entirely good reasons – to maximize business imperatives such as coordination, productivity, and control.
>
> (Amabile, 1998, p. 77)

Perhaps one of the starkest examples of an organisation 'killing creativity' is that of Kodak, as Gann explains:

> Kodak had a long history of cultivating and embracing risky innovations. George Eastman, the company's founder, recognised this when he pivoted Kodak's core business from dry-plates to film, and from black and white to colour, despite hitting profitable product lines in the short-term. Decades later, Kodak blew its chance to lead the digital photography revolution. They got things half-right. Kodak engineer Steve Sasson actually invented the digital camera in the company's R&D labs in the 1970s.
>
> (Gann, 2016)

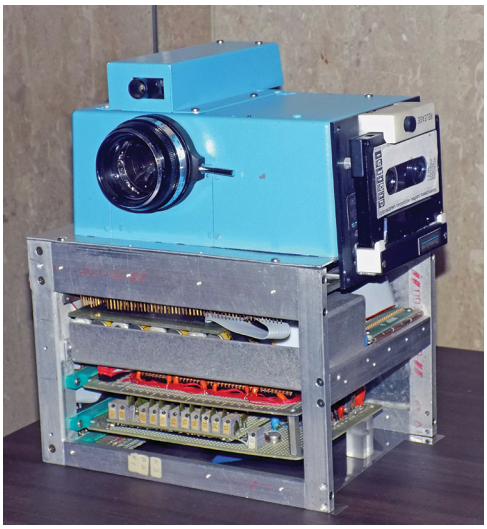


Figure 16 An early Kodak prototype of a digital camera, circa 1975.

Sadly, as Gann points out, Sasson's innovation was rejected by Kodak's leadership who saw it as a threat to their core business. The tale of Kodak's subsequent demise neatly illustrates the mistake they made and once again highlights the fact that when it comes to creativity and innovation in organisations, it takes more than just a genius in the corner or even a group of smart people. Organisations must create the conditions for new ideas to emerge and thrive and support their best people.

In the next section you will examine the importance of knowledge creation and wise leadership.

7 Knowledge creation and wise leaders

In Section 6 you considered how a supportive culture is key for creativity and innovation to thrive. Just as important, however, is the role of leadership.

Anything that happens within the context of a team, group or organisation requires leadership. In many ways the mere existence of leadership helps solve problems within organisations by providing direction and helping to facilitate solution-finding, both of which are required if organisations are to succeed.

The notion of the Innovation Architect, proposed by Paddy Miller and Thomas Wedell-Wedellsborg, is less about doing and more about supporting others as they engage in creative and innovative activities. Miller and Wedell-Wedellsborg emphasise three key leadership practices:

- being a leader of innovation is different to being an innovator
- innovation should be ongoing within the organisation's daily work, rather than just at special times of the year or only by specific people
- the focus for leaders should not be on changing people, but rather on changing the environment in which people work.

(adapted from Miller and Wedell-Wedellsborg, 2013, pp. 4–6)

While it is all well and good for a leader to be an innovation architect as Miller and Wedell-Wedellsborg propose, that still leaves the question of where new ideas come from. This was to an extent addressed in Section 6, but useful insights can also be gained by considering the case of Japan, which you will look at next.

7.1 Lessons from Japan

A distinctly different approach to both knowledge creation and wise leadership is found in Japan.

Some of the most insightful theories about Japanese-style knowledge creation and Japanese leadership have been advanced by Ikujiro Nonaka, whom many regard as Japan's most distinguished management scholar.

Nonaka's *Harvard Business Review* paper, 'The knowledge-creating company' (1991), brought his theory of knowledge creation to international attention. It argues that:

> Much as manufacturers around the world have learned from Japanese manufacturing techniques, any company that wants to compete on knowledge must also learn from Japanese techniques of knowledge creation.
>
> (Nonaka, 1991, p. 97)

The specifically Japanese techniques of knowledge creation referred to by Nonaka include more active accessing of the tacit knowledge by team members and a more holistic approach to the organisation as a whole.

Figure 17 Ikujiro Nonaka and Hirotaka Takeuchi

Nonaka's major work, 'The knowledge-creating company', written with Hirotaka Takeuchi (1995), argued that a knowledge creator's tacit knowledge could be converted into explicit knowledge.

> Explicit knowledge can easily be 'processed' by a computer, transmitted electronically, or stored in databases. But the subjective and intuitive nature of tacit knowledge makes it difficult to process or transmit the acquired knowledge in any systematic or logical manner. For tacit knowledge to be communicated and shared within the organization, it has to be converted into words or numbers that anyone can understand.
>
> (Nonaka and Takeuchi, 1995, p. 9)

In what has become known as the SECI model, Nonaka and Takeuchi argue that knowledge is created in a four-stage sequence:

1. socialisation
2. externalisation
3. combination
4. internalisation.

Socialisation with like-minded people causes an individual's tacit knowledge to be converted into explicit knowledge, which can be combined with other people's externalisations to create new knowledge that other people can internalise.

Nonaka argued that 'New knowledge always begins with the individual' (1991, p. 97) and spirals outwards to include other individuals – as Nonaka and Takeuchi depicted in the four-stage sequence of the 'knowledge spiral':

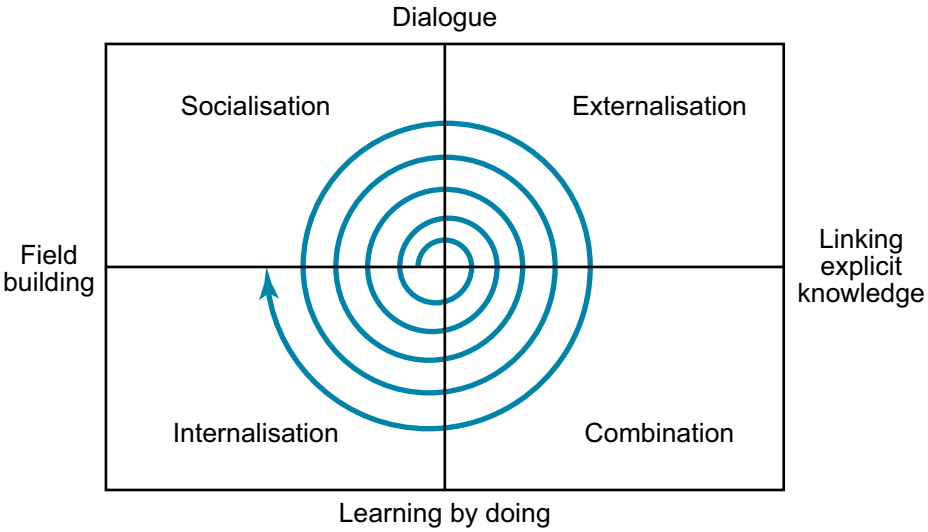


Figure 18 Knowledge spiral

In recognition of the impact of his work, in 2008, the Wall Street Journal ranked Nonaka among the world's 20 most influential business thinkers and, in 2013, Nonaka received the Thinkers50 Lifetime Achievement Award.

Activity 8 Creating promising possibilities: lessons from Japan?

Allow about 30 minutes

Watch the video 'Creating promising possibilities: lessons from Japan?'

To what extent do you agree with the proposition that the Japanese process of knowledge creation is universal?

Video content is not available in this format.

Discussion

A key learning point is the recognition of the importance of context. What works in one context or organisation will not automatically work in another. If you are seeking to develop and embed innovation you must recognise not just the opportunities that context brings, but also the limits.

Next you will consider the importance of communication in facilitating not just trust but also the exchange of ideas, thoughts and emotions.

8 Communication and trust

Simple models of communication may talk about sending and receiving messages, but you cannot look into the brain's unconscious mental processes to observe messages being sent and received.

What you communicate depends on how other people interpret what you do. Knowing whether you are communicating what you want to communicate is challenging. Even when you feel sure other people understand you, you cannot observe – objectively – what's in your mind and compare it with what's in their mind. Moreover, you cannot 'observe the unconscious mental processes that produce that conscious awareness.

For example, your eyes may detect light, just as your ears detect sound and your other sense organs detect what you taste, touch and feel, but you rely on your unconscious mental processes to render what your sense organs detect meaningful.

The many challenges inherent in effective communication are captured by the Shannon-Weaver model. This model emphasises the role of 'noise' in interrupting or perhaps distorting the supposedly smooth flow of communication between two people – a 'transmitter' and 'receiver' – but also the role that the individual themselves as a participant in the communication process might play in modifying the message based on their own understanding. Partly this is to do with the role of your conscious and sub-conscious, but it is partly also to do with the fact that you cannot 'not communicate'.

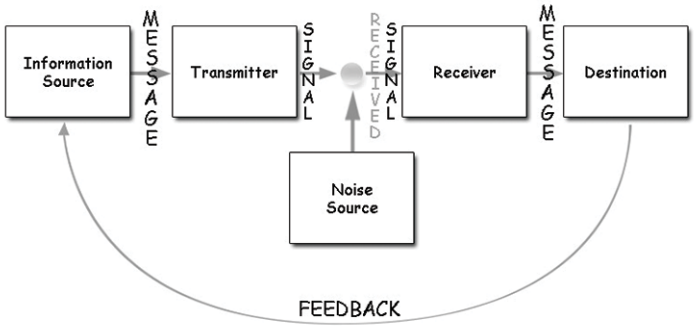


Figure 19 The Shannon-Weaver communication model

This notion of consciousness and how we interact with the world around us was explored in some depth by the American neuroscientist Benjamin Libet (Box 4).

Box 4 Communication runs ahead of conscious awareness

If you were able to let your mind stand still for a moment, you might accept that whatever you're consciously aware of knowing 'now' – which just became 'then' – is a constantly changing, highly edited summary of what your unconscious mental processes started to do about half a second ago. Your current conscious awareness is derived from what your smart unconscious selects from myriad possibilities.

Many things that your sense organs detect do not elicit conscious awareness. Leading neuroscientist, Benjamin Libet, explained 'If you were to become aware of all sensory inputs, you would be overloaded with an ineffective buzz of conscious events' (2004, p. 116). What you're consciously aware of knowing now is the most important thing you have done in the last half second – everything else is known unconsciously.

8.1 You cannot ‘not communicate’

The idea that you cannot ‘not communicate’ (Watzlawick et al., 1967, p. 51) when other people’s attention is directed your way may seem obvious, but many management theorists overlook its implications.

When people expect you to do something, ‘nothing’ may mean ‘something’ – for example, a moment’s hesitation or failing to answer a crucial email can speak volumes. If you fail to cancel your holiday when a crisis looms, your inaction might be seen as significant. Good managers have to be like good detectives. If something that should happen does not happen, they might ask ‘why?’

Figure 20 What is being communicated here?

According to research by Sophie Scott (*The Life Scientific*, 2013), laughter signals that you like and understand each other.

If you become consciously aware that you’re laughing with other people, you may infer that you agree on something; and even if you cannot put into words the exact thing that you agree on, the sense that you have communicated could provide a foundation for the development of trust and mutual understanding.

Moreover, laughing could communicate more when you’re able to laugh face-to-face as your unconscious is able to process colossal amounts of information that is detected by all your sense organs all the time. When you’re in the same physical space, interacting face-to-face, your brains have more information to work with.

You will consider face-to-face interaction in more detail next.

8.2 Why meet face-to-face?

The use of technology to communicate has a long history. For example, the electric telegraph was used to send and receive encoded messages and allowed you to communicate with people you could not see.

At first sight, progress in communication technology – which has given us videotelephony services such as Skype and FaceTime – may appear to have solved the problem of not being able to meet face-to-face. Easy access to live video links connects you to other people who may be anywhere. Nevertheless, in instances such as this you might still communicate rather less than would be possible if you were to meet face-to-face and many people are still more willing to make the effort to meet in the same physical space. One reason for this is, if you’re willing to spend more time in each other’s company, you might become better able to imagine how people think and behave.

On the other hand, an undue reliance on the subtle and unspoken messages you give during face-to-face rather virtual communications can lead to mutual understanding being taken for granted. If people do what they usually do, without conscious thought, their behaviour could pre-empt critical reflection about how to do things better.

Activity 9 Virtual or face-to-face?

Allow about 5 minutes

What do you consider to be the relative benefits of meeting either face-to-face or virtually for innovation?

Discussion

If you reflect on some of communication's complexities, you may agree that – although communication technologies allow you to communicate from almost anywhere as needed– there can be compelling reasons to meet people face-to-face: deeper personal understanding might result and you might be better able to pick up on the unspoken cues which everyone gives. While both have a role in supporting innovation, face-to-face interactions can lead to new and unexpected understandings.

Now watch the first 2 minutes 21 seconds of the video below in which cognitive neuroscientist Professor Sophie Scott discusses the nature of human speech and communication.

View at: youtube:mX2hYTEhK-Q

Discussion

As Sophie Scott highlights, so many subtle and unexpected messages are 'encoded' in voice and speech. Next time you engage with a person you know well, you might wish to reflect on some of the key things you are able to learn or understand about that person, based simply on their voice and speech.

Next you will consider the importance of boundaries in both supporting and blocking innovation.

9 Understanding organisational boundaries

While you might recognise that organisations have boundaries, it can be harder to understand where they lie and what they signify. As a consequence, if you are not careful you might end up ignoring the challenge of organisational boundaries and fall under the spell of the seductive appeal of universalism – the assumption that ideas, models or approaches apply universally in all settings.

Universally applicable methods of managing efficiently treat management as if it were a science and often seem to ignore context. The way in which employees are expected to behave is also reduced to universally applicable rules, which any suitably qualified person could follow.

Robert Solow, who won the 1987 Nobel Memorial Prize in Economic Sciences lamented the lack of attention to context, observing that many of the best and brightest economists proceed as if 'There is a single universally valid model of the world [that] only needs to be applied' (Solow, 1985, p. 330). Universalism may sound simple but, if you want to imagine how particular people in a particular context might think and behave, it is important to develop your contextual intelligence.

Management guru Peter Drucker was determined to demonstrate that 'there is no such thing as the one right organization' (Drucker, 1999, p. 11). What works in one context might not work in another context. What works today might not work tomorrow. Contexts change. For example, before 1940, what is now known as Silicon Valley was mainly agricultural. It was a major producer of prunes and apricots, but the organisation that was 'right' for producing fruit might not be right for the high-technology start-ups that have come to symbolise today's Silicon Valley.

9.1 Khanna's case for contextual intelligence

Tarun Khanna has spent his career studying how business is practised in different global settings. And while he once aspired to universalism, experience has taught him otherwise:

> Trying to apply management practices uniformly across geographies is a fool's errand, much as we'd like to think otherwise.
>
> (Khanna, 2014, p. 60)

Khanna stresses that 'Most universal truths about management play out differently in different contexts: best practices don't necessarily travel'. Accordingly, 'Global companies won't succeed in unfamiliar markets unless they adapt – or even rebuild – their operating models' (2014, p. 61). Boundary-spanning companies – those that work across boundaries that may separate ways of working within a nation or across national borders – may have to temper their established assumptions about what ought to work with efforts to determine what does work.

Khanna's argument is that people often 'overestimate what they know about how to succeed in other countries' (p. 60). However, if they develop contextual intelligence, they

might be better able to appreciate their limitations and what they would have to do to succeed in a different context.

9.2 Brain circulation

AnnaLee Saxenian's (2002) concept of brain circulation refers to the way in which immigrant entrepreneurs from developing countries, such as India and China, who were attracted to Silicon Valley's high technology hive, return home and use what they have learned.

Figure 21 We live in a much more inter-connected world

In the late 1990s, immigrants – most of whom were born in Asian countries – accounted for more than half of Silicon Valley's 200 000 scientists and engineers. But subsequently, high-technology growth in China and India has started to attract those who had once felt that success depended only on settling abroad.

By 2002, brain circulation had become a well-established aspect of China and India's abilities to span technological and cultural boundaries (Saxenian, 2006b). While those who emigrate to pursue a better life abroad might be viewed as unpatriotic, Saxenian contends that brain circulation has been significant in transferring know-how from Silicon Valley to China and India's indigenous industries.

9.3 The need for new models

Saxenian could see that the standard economic models of regional success and comparative advantage did not adequately describe the success of places such as Silicon Valley. In her first book *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (1996), Saxenian explored this challenge by contrasting the region's characteristics with those of its US east coast counterpart in Boston, Route 128.

> Silicon Valley has a regional network-based industrial system that promotes collective learning and flexible adjustment among specialist producers of a complex of related technologies. The region's dense social networks and open labor markets encourage experimentation and entrepreneurship. Companies compete intensely while at the same time learning from one another about changing markets and technologies through informal communication and collaborative practices; and loosely linked team structures encourage horizontal communication among firm divisions and with outside suppliers and customers. The functional boundaries within firms are porous in a network

> system, as are the boundaries between firms themselves and between firms and local institutions such as trade associations and universities.
>
> (Saxenian, 1996, pp. 2–3)

Saxenian suggests that Silicon Valley started to change from agriculture to high technology when the Second World War brought military activity to the San Francisco bay area. During the Cold War, funding flowed to Silicon Valley's fledgling industries. Those who came to Silicon Valley during the 1960s and 1970s felt like outsiders. Power was concentrated in the US east coast, and – in Saxenian's assessment – the engineers who came 'hung together'. They shared more information than their counterparts on the east coast and elsewhere, and had less time for hierarchies. Within and between firms there was a more open network. Despite perennial predictions about its demise, Silicon Valley's entrepreneurs have continued to create innovative ways of doing things (Saxenian, 2006b).

Although there has been a widespread willingness to assume that Silicon Valley is the 'core' and other less prosperous places are the 'periphery', brain circulation is contributing to a different picture. China, India and other places that might once have been pronounced *peripheral* have benefitted from those who have returned from the putative *core*. Brain circulation can span boundaries, as those who become fluent in different cultures – according to Khanna's arguments about contextual intelligence – move between contexts.

9.4 The challenge of culture

The ideas put forward by Khanna and Saxenian confirm that culture plays a critical role in determining the success of many approaches to management and innovation. One of the leading thinkers in the field of national culture is Erin Meyer who develops her ideas and explains the culture map approach in the following video in Activity 10.

Activity 10 How to lead a successful global team

Allow about 10 minutes

Watch the video below. Whilst watching consider how relevant Erin Meyer's ideas are to your organisation or context.

Video content is not available in this format.

Discussion

There are many ways to diagnose and understand culture, yet Meyer makes an important contribution by synthesising a number of different perspectives. Rather than being based on just one single factor, cultural differences are highly complex and multi-faceted. While this can sometimes make the differences harder to understand and accommodate, it also makes them much more intriguing!

In the final section you will draw together many of the key points raised so far in this course and consider how you might take a more strategic approach to innovation.

10 Taking a strategic approach to creativity and innovation

How managers approach both strategy and innovation has significant implications for the long-term success of their organisation. While the traditional view might be that they are separate phenomena, both strategy and innovation are closely linked when it comes to achieving longer-term organisational success. Importantly, by taking a more strategic view and practising what has been called strategic innovation, both managers and organisations are able to maximise the benefits of their creativity and innovation practices for the benefit of customers, employees and stakeholders.

One attempt to link together both strategy and innovation in a meaningful way was outlined by Markides (1997), who coined the term strategic innovation. Key to this approach is that 'Strategic innovation is about innovating the strategy itself' (FT.com, n.d.).

Figure 22 Costas Markides

In order to kick-start strategic innovation, Markides outlines five key approaches that leaders in an organisation should take:

1. Redefine the business.
2. Redefine the who: who is your customer?
    - A company should think of new customers or new customer segments and develop a game plan that serves them better.
3. Redefine the what: what products or services are you offering these customers?
    - A company should think of new customer needs or wants and develop a game plan that better satisfies these needs.
4. Redefine the how.
    - Companies should leverage existing core competencies to build new products or a better way of doing business and then find the right customers.
5. Start the thinking process at different points.
    - For example, instead of thinking, 'This is our customer, this is what he or she wants, and this is how we can offer it,' start by asking: 'What are our unique capabilities? What specific needs can we satisfy? Who will be the right customer to approach?'

(Markides, 1997, pp. 12-13)

By following these steps, Markides contends, organisations are able to enhance both their strategic and innovative potential.

While it might require a degree of lateral thinking, these same five key approaches can just as easily apply to a public sector body or perhaps even charity. However, clearly in those contexts the focus might, for example, be less on customers and more on service users, and – equally – less on profit and more on outcome.

Now watch the following short clip in which Markides (Irish Management Institute, 2013) discusses the concept of strategic innovation in greater detail.

Video content is not available in this format.

In the next section you will consider the key consequences of Markides' approach.

10.1 Business model innovation

An important consequence of Markides' approach is a need to innovate the business model. As Amit and Zott suggest, 'more companies now are turning toward business model innovation as an alternative or complement to product or process innovation' (2012, p. 41). In the future, this might include digital transformation and the integration of new and as yet un-thought of technologies which will radically change the way the way that organisations of types deliver their products and services. Importantly, this applies just as much to businesses as it does to public sector bodies, charities or any other type of organisation.

While this can be a positive, the process requires active management. One way to manage the process effectively is to apply models such as the Business Model Canvas (Osterwalder and Pigneur, 2010), which provides a clear and structured way for managers

to analyse and rethink their entire business model by breaking it down into nine key building blocks each of which can analysed and understood.

Activity 11 Applying strategic innovation

Allow about 5 minutes

How might your organisation or one you know well apply the strategic innovation framework in order to enhance creativity and innovation?

Discussion

Innovation does not just happen by itself – it requires a coherent approach and a concerted effort to make it work. By applying the strategic innovation framework you can take a more structured approach and ensure that all aspects of innovation are considered.

For example, by analysing things from a strategic innovation perspective an organisation might 'pivot' to a new business model based on new opportunities they have discovered, or perhaps change from a B2C ('business-to-consumer') model to a B2B ('business-to-business') model. Equally they might change the products or services they offer, or change the direction of their organisation altogether. Adopting a strategic innovation approach can facilitate these informed decisions.

The way that organisations approach their innovation strategy can impact the way that they innovate. You will look at a number of more common approaches to innovation next.

10.2 Radical vs. evolutionary change

In much management literature the term continuous improvement is used to describe the accumulation of small incremental changes that collectively amount to something quite significant.

In general though, the importance of this kind of evolutionary change, tends to be underestimated in the West; and most public and press attention tends to focus on 'glamorous' big breakthroughs. This is despite cumulative gains from incremental improvement being critically significant and radical innovation being the exception rather than the rule as Figure 23 indicates.

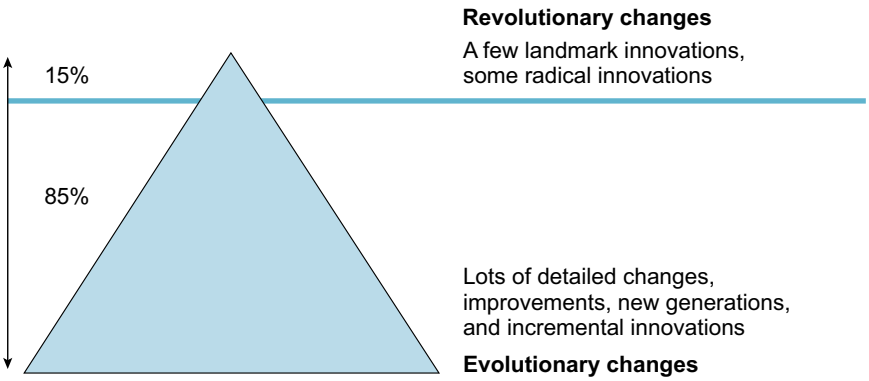


Figure 23 The iceberg of change

Take for example the Gillette Razor. Since it was first launched in the early 1900s, the Gillette Razor has been consistently adapted and updated based on changing consumer needs and new technologies.

While in themselves each of these changes might be evolutionary in nature, the *cumulative* effect is potentially quite revolutionary, as shown by dramatic changes to the Gillette Razor over the last century (Figure 24).

Figure 24 The evolution of the Gillette Razor

While each of these iterations and updates to the Gillette Razor might have entailed subtle improvements at the time, something much more radical in the form of disruptive innovation is needed.

10.3 Disruptive innovation

> When companies have to name their most daunting competitor, they often point to the leading incumbent in their market-place. Thirty years ago, General Motors would point to Ford Motor Corp. [...] Harvard Business School would point to Stanford Business School.
>
> These are all sustaining rivals, where companies are fighting for existing customers in existing markets. These battles are important, but companies also need to watch for disruptive innovations incubating outside of the core market.
>
> (Anthony and Christensen, 2005, p. 41)

The term ‘disruptive innovation’ was coined by Clayton Christensen in a seminal article for the *Harvard Business Review* (Bower and Christensen,1995). The premise is plausible: large companies or significant players in their field may be quite good at innovation that fits within their existing paradigm, but are often vulnerable in the face of radical changes that challenge their worldview.

No one is really going to offer management any form of reliable crystal ball, but there is merit in examining innovation history in an attempt to avoid repeating the same mistakes. Many critical failures arise because a management team has been to some extent ‘blind-sided’ by developments that lie outside their previous experience. Therein lies the peril of organisational orthodoxy; the ‘way we do things around here’ may be a key ingredient in current success, however, it can lead to blinkered vision (concerning what *might* be possible, or what might be just around the corner). Core competencies are often

inextricably linked with ‘core rigidities’ (Leonard-Barton, 1993; Tushman and O’Reilly, 1996).

Smaller, younger, and more agile organisations tend to have fewer traditions to define the ‘right way to do things’. The lack of conventional wisdom often makes it easier for a smaller organisation to create something radically new; in Christensen’s terms, to produce disruptive innovations.

Large organisations sometimes set up skunkworks (groups of innovators charged with developing a new product outside standard systems) to get around the potentially inhibiting effect of standard reporting procedures. These groups often report directly to top management. The term ‘skunkworks’ was originally coined to describe an initiative at Lockheed Aerospace where key staff were deliberately isolated from the day-to-day constraints of company bureaucracy in order to foster innovation (Rich and Janos, 1994).

10.4 Open innovation

Open innovation starts with the premise that ‘not all the smart people work for us’ (Chesbrough, 2003) and consequently legitimates the acceptance of ideas that were ‘not invented here’.

Open innovation leads inevitably to ideas of innovation networks where different aspects of the total process – i.e. from generating ideas through to commercial realisation, marketing and continuous development – are not just conducted by different people but by different organisations. In this sense the role of alternative organisation structures such as clusters and network organisations is implicitly recognised.

Table 2 compares the principles of closed innovation with those of open innovation.

Table 2 Principles of closed and open innovation

Closed innovation principles	*Open innovation principles*
The smart people in our field work for us.	Not all the smart people work for us so we must find and tap into the knowledge and expertise of bright individuals outside our company.
To profit from research and development (R&D), we must discover, develop and ship it ourselves.	External research and development (R&D) can create significant value; internal R&D is needed to claim some portion of that value.
If we discover it ourselves, we will get it to market first.	We don’t have to originate the research in order to profit from it.
If we are the first to commercialise an innovation, we will win.	Building a better business model is better than getting to the market first.
If we create the most and best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our intellectual property (IP) so that our competitors don’t profit from our ideas	We should profit from others’ use of our IP, and we should buy others’ IP whenever it advances our own business model.

(Source: Chesbrough, 2003).

Conclusion

In this free course, *Making creativity and innovation happen,* you have considered how creativity and innovation might help you find ways of doing things better and differently.

Having looked first at individual creativity – both in terms of its origins and how it can be enhanced – you have also been introduced to the importance of creativity and innovation in organisations. For both individuals and organisations, rather than seeing creativity and innovation as being separate to the normal flow of daily opportunities and challenges, they should in fact be a key facet of how things are done. In other words, for creativity and innovation to thrive it should be – as Miller and Wedell-Wedellsborg (2003) put it – a case of 'innovation as usual'!

This OpenLearn course is an adapted extract from the Open University course **BB842 *Sustainable creative management*.**

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