

An Introduction to Innovation

Lecture session I

Alan Mumby

Session I

February 4th 2022





Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

PROGRAMME OF STUDY HANDBOOK

MSc International Innovation Management (*IIM*)

MSc Industry 4.0 Advanced Manufacturing (*I4W*)

Including the following 'Short Courses'

- Level 6 or 7 Business Improvement with Innovation Management (Post Code dependant) (*BI with IM*)
- Level 5 Continuous Improvement with Industry 4.0 (*CI with I4*)
- Level 7 Smart Manufacturing with Industry 4.0 (*SM with I4*)

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February 2022

3rd February 2022

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You will also need to have Microsoft Teams available, and it is important that you login to Microsoft Teams using your Student ID rather than your own organization Login. This is important for ensuring that you are registered for each session and have the access you need to resources during the session.

Programme and Module information including forums and Tutor contact information is found on Moodle at <https://moodle.uwtsd.ac.uk>

This video will demonstrate access and basic use
<https://uwtsd.hosted.panopto.com/Panopto/Pages/Viewer.aspx?id=5871a591-7bc9-454c-bc39-aab800eeca72>

If you are missing courses/modules in the **My Courses** block please contact your **Principal Project Officer**. Please note it can take 24hrs for enrolment data to feed into Moodle. If you have problems finding resources (timetables, lecture notes, assignment briefs etc.) please contact the **lecturer** that delivers the course/module.

For any technical issues or error messages contact the **IT Service Desk** via:

Web: <https://webhelp.uwtsd.ac.uk>

Tel: 0300 500 5055

Or email: ITServiceDesk@uwtsd.ac.uk

In any correspondence please include your name and username (your student number) together with details of your issue.

Mike Swanson, one of our Instructional Designers will also be able to help with any technical queries you may have that this hasn't answered for you.

Student email correspondence

Your email address is your student number (usually 7 digits) followed by @student.uwtsd.ac.uk

E.g. 0101010@student.uwtsd.ac.uk

To access your student email, simply open a web browser and enter:
www.outlook.com/uwtsd.ac.uk

You can forward your student email from your University account to another email account (e.g. your personal email address, or perhaps your work address.)

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3. Under "Forward my email to" at bottom of page enter the address you want your mail sent to
4. If you want a copy of forwarded emails to remain in your @student.uwtsd.ac.uk account then make sure Keep a copy of forwarded messages in Outlook Web App option is ticked
5. Click Start Forwarding to save your settings

The LLR provides a *Need More?* service which aims to provide a one stop shop for all learning resource needs, for example, if a book, journal or thesis is needed which is not in the library stock then it may be purchased or borrowed from another library. Further information can be found here: <http://www.uwtsd.ac.uk/library/library-guide/need-more/>.

Learning Spaces

There are six libraries across the Carmarthen, Lampeter, London and Swansea campuses. As well as collections, the library provides a variety of modern and flexible learning spaces, reflecting different styles of working e.g. group study spaces and quiet areas, as well as IT facilities, wireless internet, photocopying and printing facilities and excellent customer service.

Online Library

The LLR offers a wide range of printed and electronic resources including an extensive collection of online e-journals and e-books that are available 24/7. Users may access an extensive collection of online e-journals and e-books that are available 24/7 including scholarly journals, newspapers, company reports and reference material. The library catalogue searches the whole range of print and online library materials and gives access to your library account from anywhere.

InfoSkills

All students are provided with a library tour, a Basic Skills session and a Referencing Essentials session in the first few weeks at the University. Academic Liaison Librarians will help students to develop the skills required to find, use and evaluate information sources within their subject areas. Numerous sessions are offered throughout the year to help students develop their Information Skills further to support their academic success and employability. These include sessions on identifying fake news, using statistics, commercial awareness, managing the information about them that is available online and accessing information sources in accessible formats. The LLR operates an open door policy which enables students to ask for help and advice on the information resources available throughout the academic year. Academic Liaison Librarians are welcomed to Staff / Student Committees, School Board meetings and also attend other relevant Faculty meetings where invited, including Faculty Board. For further information on InfoSkills provision go to: <https://www.uwtsd.ac.uk/library/infoskills/>

Special Collections and Archives

The Library is also home to the Special Collections of UWTSd, including the University's oldest printed books, manuscripts and archives. The Special Collections include over 35,000 printed works, 8 medieval manuscripts, around 100 post medieval manuscripts, and 69 incunables. Material from the Archives includes the institutional archive of St David's College, later The University of Wales, Lampeter, and Trinity College Carmarthen, both constituent members of the University of Wales Trinity Saint David. Students are encouraged to use these wonderful resources as part of their studies, regardless of discipline. Visits and workshops are often arranged within the purpose-built reading rooms in the Lampeter campus library and there is a regular programme of exhibitions across the campuses and online.

For recent service developments, updates and contact information please visit the University Library website at <http://www.uwtsd.ac.uk/library/>. Please also follow the Library and Learning Resources on Facebook, Instagram or Twitter for up-to-date news, service developments and information on new services and resources: @UWTSdLib

Programme Structure

MSc International Innovation Management (IIM)

February 2022	June 2022	October 2022	February 2023	June 2023	October 2023
Introduction to Innovation	Introduction to Industry 4.0	International Innovation Management	Management of New Product Development	Major Project / Dissertation	
Research Methods & Professional Development		Financial Management and Planning			

MSc Industry 4.0 Advanced Manufacturing (I4W)

February 2022	June 2022	October 2022	February 2023	June 2023	October 2023
Introduction to Industry 4.0	Introduction to Innovation	Design for Industry 4.0	Advanced Industry 4.0	Major Project / Dissertation	
Research Methods & Professional Development		Financial Management and Planning			

Short Course – Level 7 (+ Level 6) Business Improvement with Innovation Management (BI with IM)

Additionally, this short course is available as two Level 6 modules due to funding availability in East Wales. These Level 6 and Level 7 modules will be taught together, with a very slight difference in assessment strategies, as shown in the Module Outlines.

Please note that this Level 6 or Level 7 is purely related to the funding that is available in different areas of Wales.

Please contact Amanda Hughes our Principal Project Officer if you have any queries about this.

Many students having enjoyed this Level 7 two-module short course have opted to continue their studies by adding some extra learning through additional modules or carried on to the full MSc programme.

February 2022	June 2022
Introduction to Innovation	Management of New Product Development

Short Course – Level 5 Continuous Improvement with Industry 4.0 (CI with I4)

February 2022	June 2022
Six Sigma Green Belt	
Group Project	

Please note for February 2022 cohort, the Level 5 Continuous Improvement with Industry 4.0 programme will follow the following timetable;

- Friday 4th February to Friday 25th March – 3:15pm to 5:15pm
- Friday 1st April to Friday 27th May – 1pm to 3pm

Group Project Tutorials will be scheduled at times to suit both you and the Academic Team.



- the processes for assessment and the determination of awards are sound and fairly conducted.

Students may request a copy of the previous year's External Examiner's Report for their programme of study by contacting the Exec Head of MADE Cymru.

Please note that students are not permitted to make direct contact with the External Examiners without permission and to do so may be considered a disciplinary offence.

The Academic Year

Block One – October to January (Christmas Break on Friday 24th and 31st December)

Block Two – February to May (Easter Break on Friday 15th April)

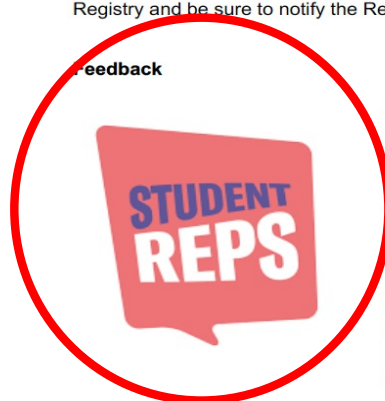
Block Three – June to September (Summer Break on Friday 19th and 26th August)

Information about you and your programme of study

Information about you and your programme of study is held by the University on a central Student Record System managed by the University Registry. It is essential that the University Registry has an accurate record of your personal details at all times. It is equally important to ensure that you are enrolled on the correct Programme of Study and on the correct modules. Failure to inform the Registry of any changes in this respect can result in a range of problems including not being able to borrow materials from the Library and Learning Resources; and not having access to the IT services.

Please take time to check the enrolment information provided by the University Registry and be sure to notify the Registry of any errors or changes.

Feedback



Feedback on your programme of study and modules is welcome and important and will help us to improve and enhance your learning experience. You can give feedback in a number of ways: through the student representative for your programme of study, through module evaluation questionnaires, through informal meetings with your personal tutor, teaching staff or the Principal Research Fellows, through focus groups set up by Schools to gain feedback from students on particular issues, or through the Students' Union. If there are issues, then it is important that you share these with us so that we can address them. Your opinion is valued.

More on this in the Student Staff Meetings section on Page 19.

Contact details

technical issues

Mike Swanson

mike.swanson@uwtsd.ac.uk

enrolment/admin/other things of
similar nature

Amanda Hughes

amanda.hughes@uwtsd.ac.uk

content or context of the course,
assignment specification,
121 tutorial time

a.mumby@uwtsd.ac.uk

Tuesday Seminar Tutorials

Half past six to half past seven

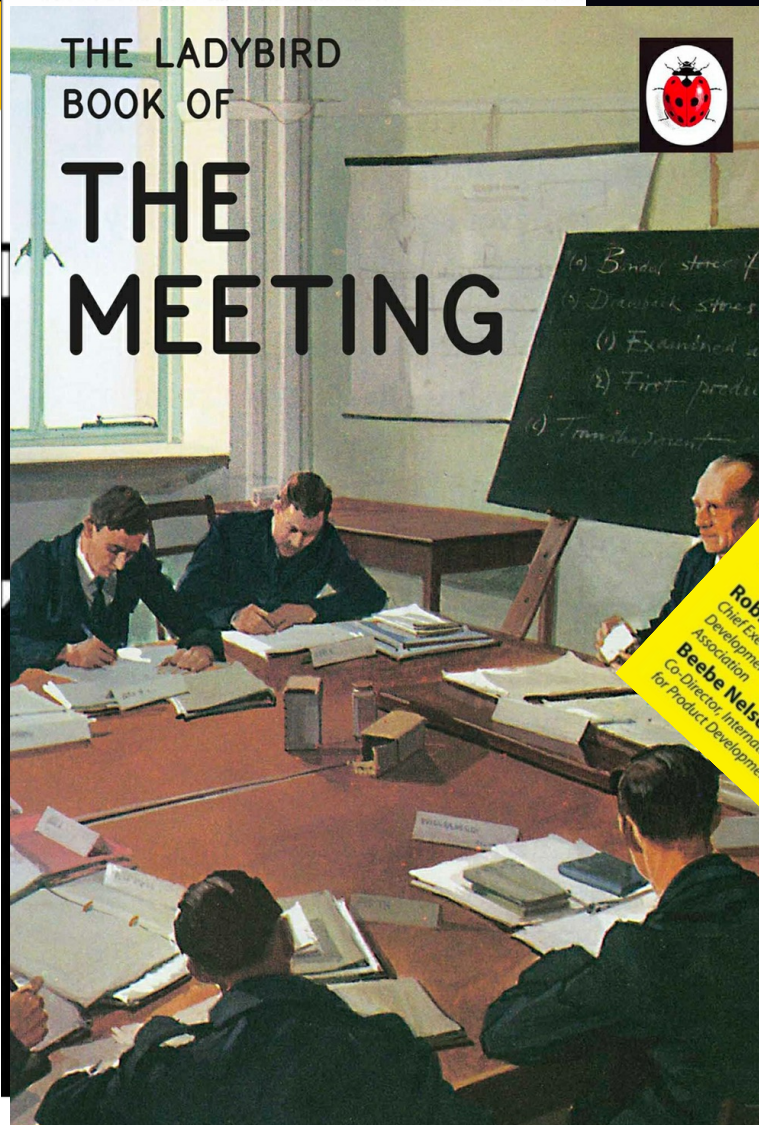
18:30 - 19:30

- Review and or focus on previous Friday Lecture Session
- Preview and discuss up coming academic assessments
- Guest Lectures

A WHITEBOARD OVERVIEW BY MA

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BOOK OF

THE MEETING



STRATEGIC MANA
Technology

New Product Development

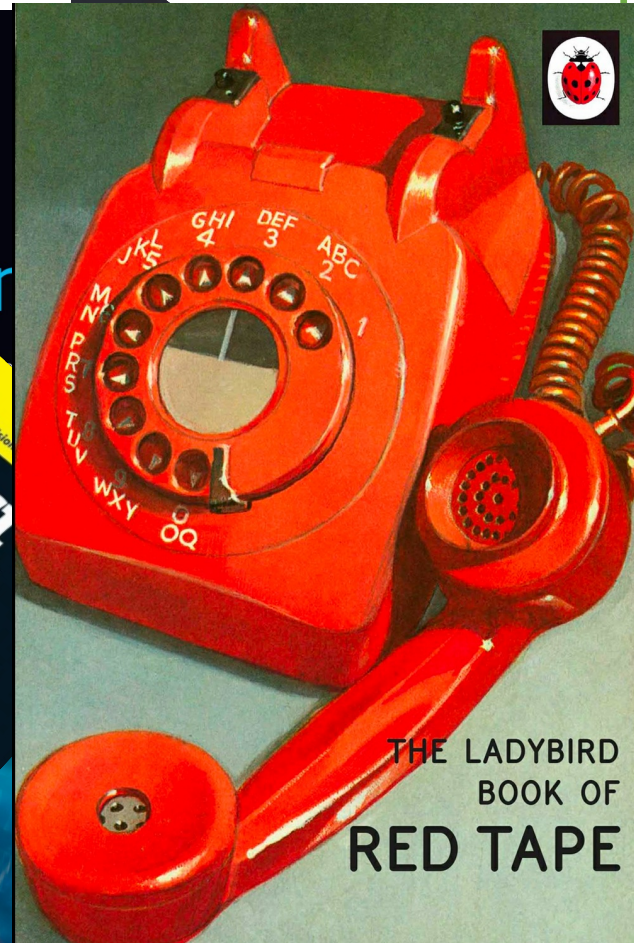
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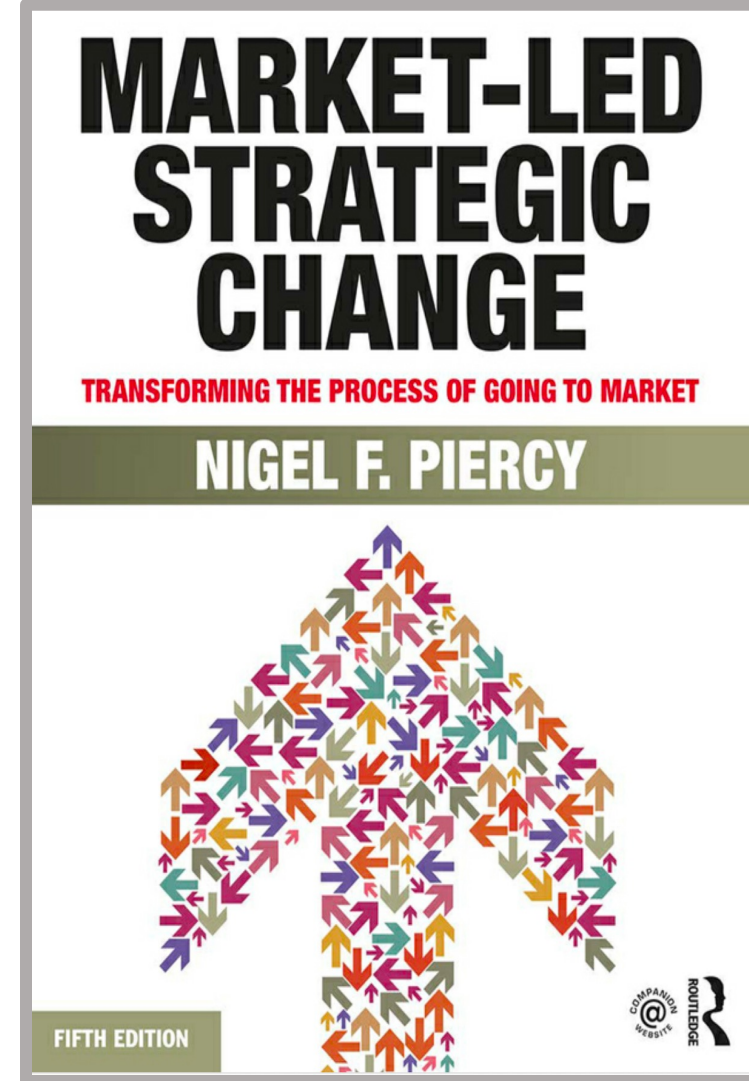
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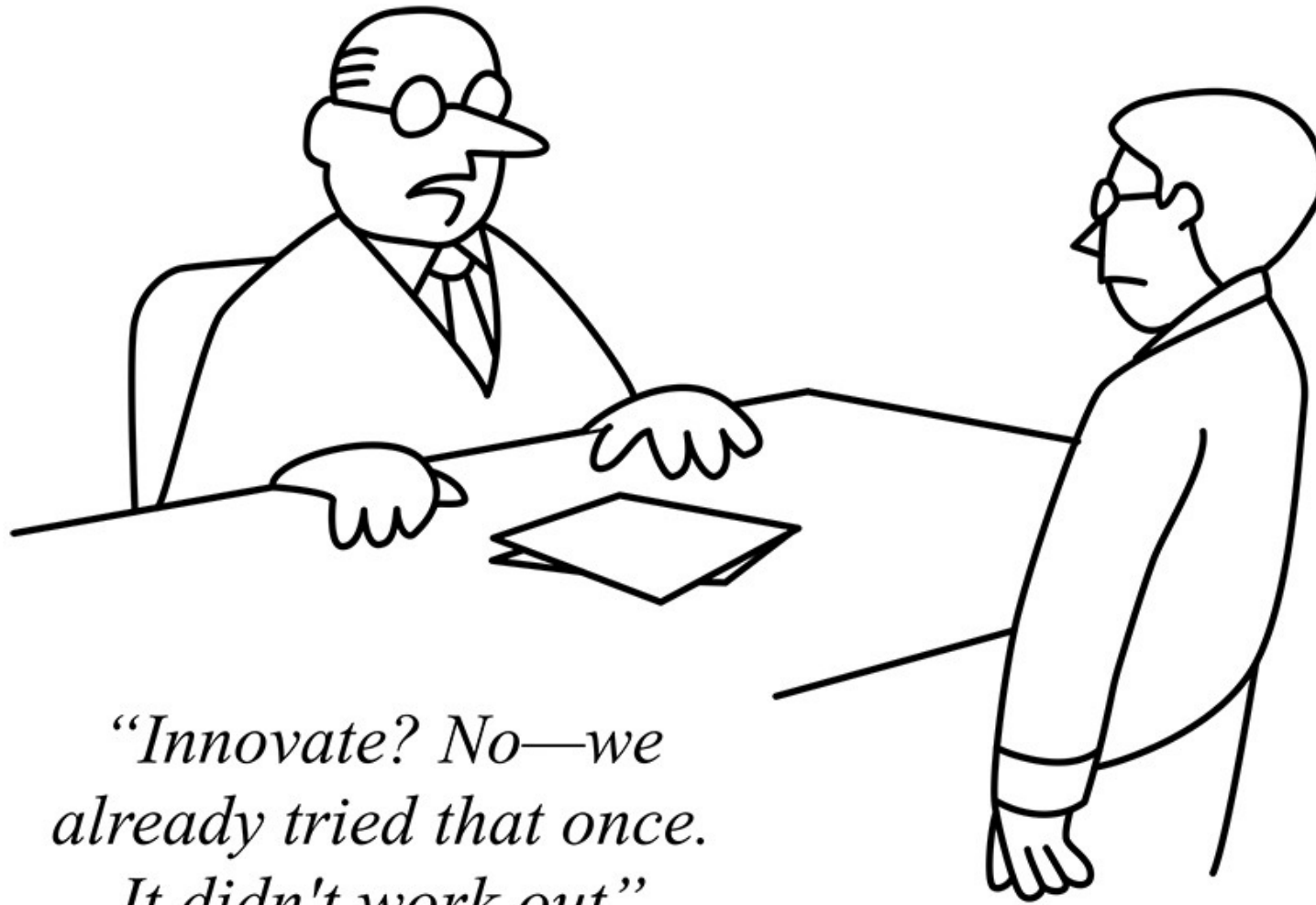


	Innovation Management	
Feb 4 th	Induction Day	Alan Mumby
Feb 11 th	Library Literature Research Typology of Innovation	Professor Alan Lewis
Feb 18 th	Introduction to Innovation	Alan Mumby
Feb 25 th	introduction to Assessment A Innovation - Uncertainty & Risk	Alan Mumby
March 4 th	Technology Drivers	Alan Mumby
March 11 th	Circular Economy I	Eoin Bailey
March 18 th	Business Drivers	Alan Mumby
March 25 th	Innovation Metrics	Alan Mumby
April 1 st	Presentation Assessment A	Alan Mumby
April 8 th	1-2-1 Tutorials	Alan Mumby
April 15 th	BANK HOLIDAY	Alan Mumby
April 22 nd	Challenges & Barriers	Alan Mumby
April 29 th	Introduction to Assessment B	Alan Mumby
May 6 th	Innovation Across Boundaries	Alan Mumby
May 13 th	Innovation - Lessons Learn Innovation Literature Review	Alan Mumby
May 20 th	1-2-1 Tutorials	Alan Mumby
May 27 th	Hand in Assessment B	

lecture
programme
February - May

Capturing Ideas and managing innovation

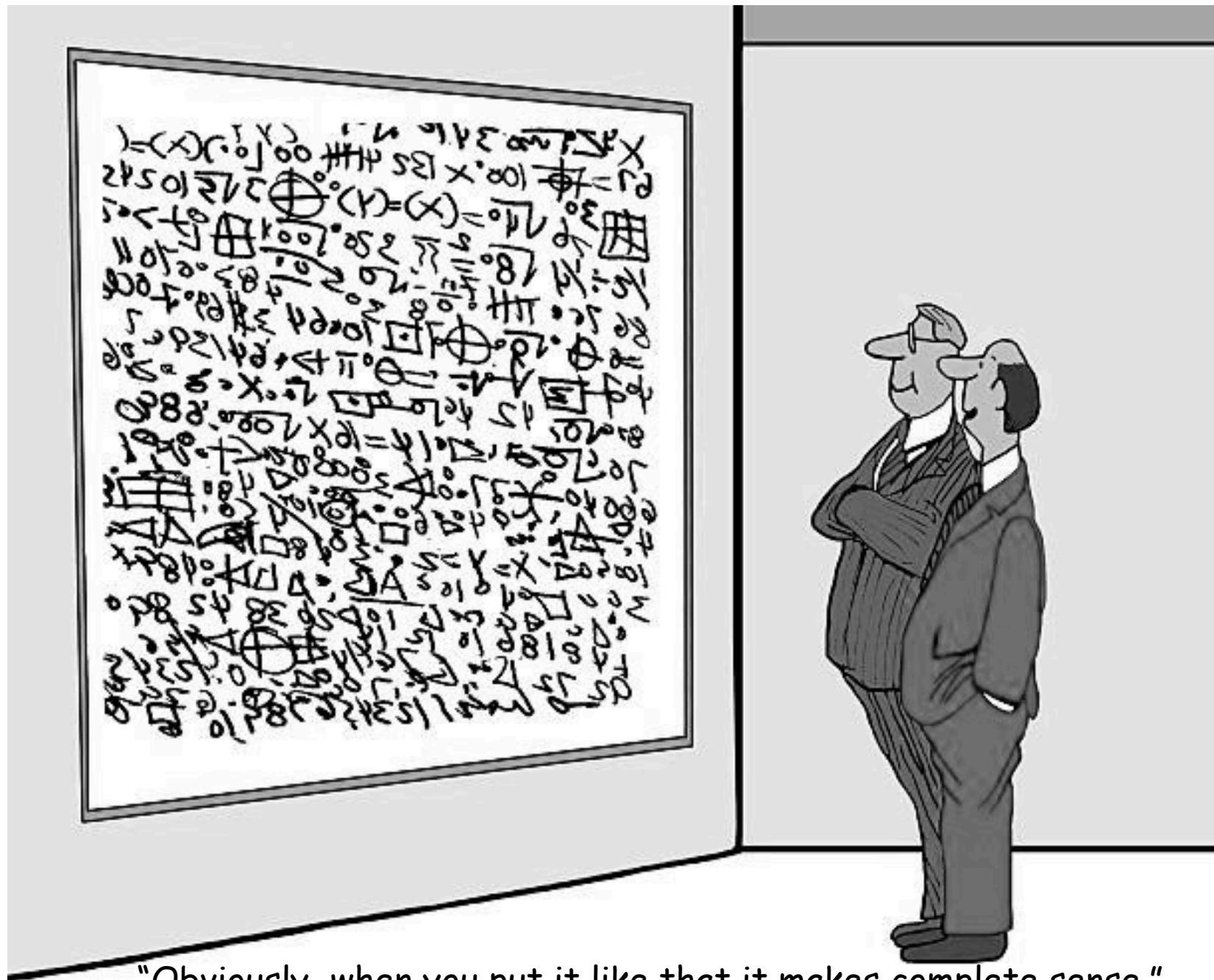
Where's the beginning ?



*“Innovate? No—we
already tried that once.
It didn't work out”*

Ideas.....?

Coming up
with ideas



Keep things easy to
understand and follow

"Obviously when you put it like that it makes complete sense."

Research & Development

Is R&D something that you do in a structured formal format?

Is R&D something that you do in an unstructured informal manner?

Does R&D have a focus – and if so what's it aligned to?

Does it need to widen it's focus, consider other applications for its manufacturing potential

Managing any R&D is important,
it has a value,
it should be looked after and encouraged.

Brain Storming

What makes this tactic so popular?

“...hey guys - remember there's no such thing as a bad idea!”

Someone needs to filter through all suggestions and find the ones that have the biggest potential to succeed.

Outside of the Company

Understanding the world of our clients and customers.... and their customers

Creating 'in house' time for;

having a better understanding of the manufacturing sector

having a better understanding of the market sector

do we attend trade shows

Are we reading magazines and journals.....

Coming up with ideas

IDEAS



Coming up with ideas



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Sinochem to Compound Elix Grades in China
Nov 23, 2020
Sinochem acquired ABS compounder Elix in January 2019.



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Manufacturing Fortunes Mixed Under Biden
Nov 21, 2020
The incoming Biden administration will differ from Trump on manufacturing — from reshoring incentives to stability in trade.



Talent Talk: The Five Best Questions to Ask at Job Interviews
Nov 23, 2020
Find out what the best candidates are asking you.



Trelleborg Launches Anti-Microbial System for Polyurethane Materials
Nov 20, 2020
The AMU/SHIELD system embeds anti-viral, anti-bacterial, anti-

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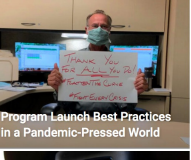
Containing the Threat: Viking Plastics Takes on Cybersecurity during the Coronavirus Pandemic



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Injection Moulding

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Rapid Application Group and Gavco Plastics bring flexibility to production supply chain with 3D printing
Rapid Application Group (RAG) has announced a collaboration with plastic injection moulding company Gavco Plastics to provide a centralised group that takes parts from prototype to mass production.
9 JUL 2020 07:20 AM TECHNOLOGY NEWS



Plastic Parts Direct launches 3D printed injection mould tool service
UK manufacturer Plastic Parts Direct has launched a new 3D printing service for injection mould tools following a 50,000 GBP investment.
29 JAN 2020 09:05 AM TECHNOLOGY NEWS



Q&A: AddiFab on combining the benefits of 3D printing and injection moulding
TCT speaks to the TCT Awards-shortlisted AddiFab about its Freeform Injection Molding process and the backing from Mitsubishi Chemical.
3 OCT 2019 09:44



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Innovation and Chaos

Tom Hardy, Director, Design Continuum

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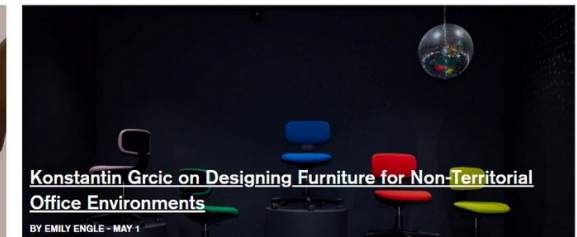
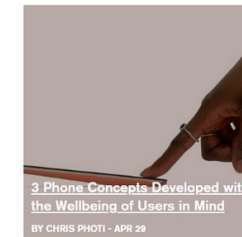
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Coming up with ideas

IDEAS

Do you need to be '*a Creative*' no

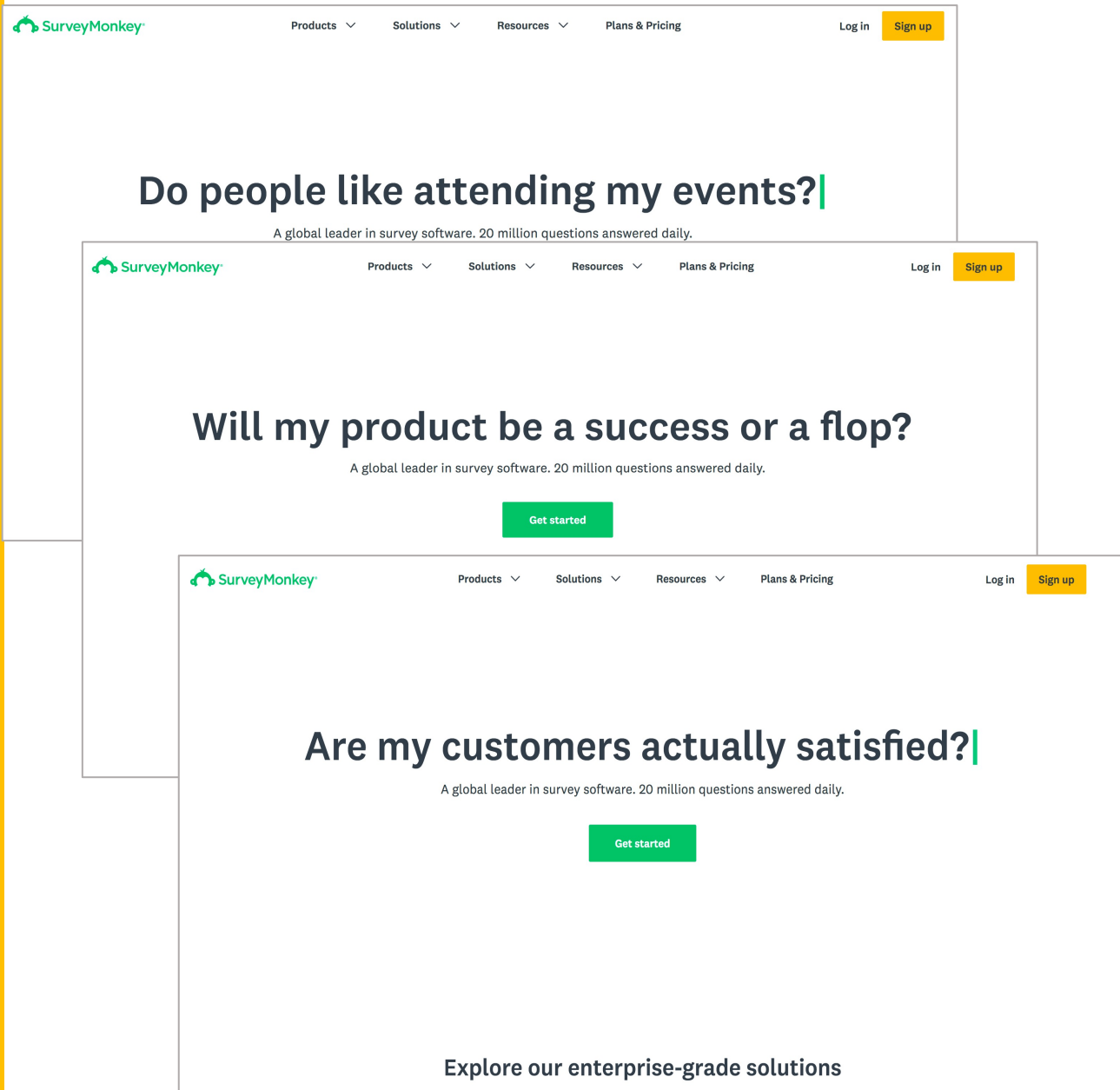
You just need to be creative in your outlook and thinking

The ability to come up with fresh product ideas, new way of creating product or services separates top-performers from their less successful peers, so you definitely need to think of how to improve this skill.

Coming up with ideas

IDEAS

organise an opinion poll to directly ask people what they want. For example, a platform such as [Survey Monkey](https://www.surveymonkey.com) allows you to launch a simple survey within minutes, so why not use it as the idea generation tool?



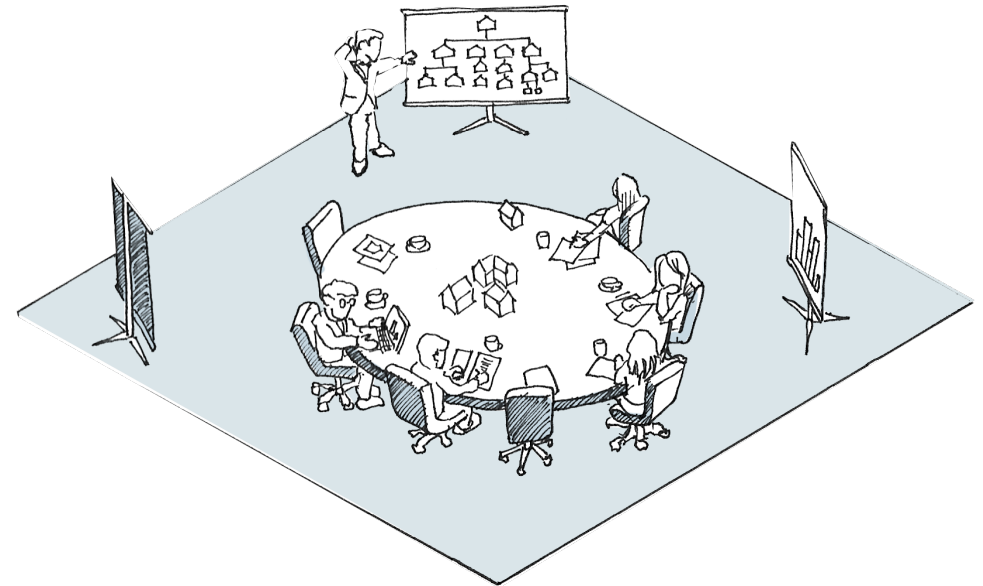
1. Strategy

IDEAS

Choosing to innovate means knowing how to project your business into the future and identify the key factors that will give it value in 3, 5 or 10 years.

The art of this projection also includes;

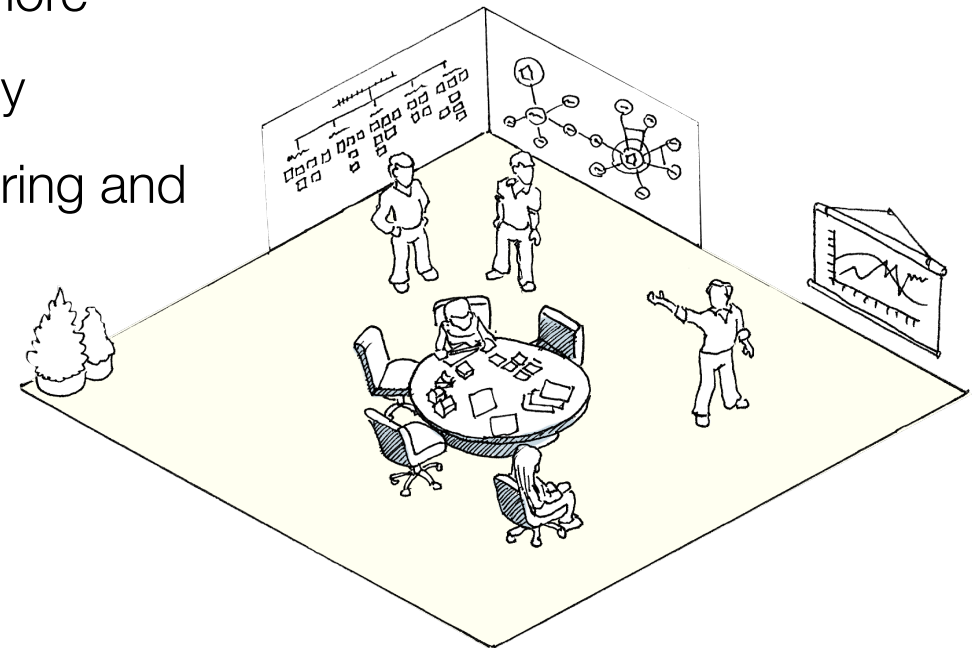
- knowing how to surround yourself with a good team,
- showing financial agility
- mastering the concepts of intellectual property.



2. Generating new ideas

The development of an innovation inevitably starts when an idea emerges. But, how do you come up with an idea? Even more difficult, how do you keep coming up with ideas? Creativity techniques may be one solution, together with the monitoring and observation of your;

- encouraging R&D
- customers,
- competitors
- and market sector trends.

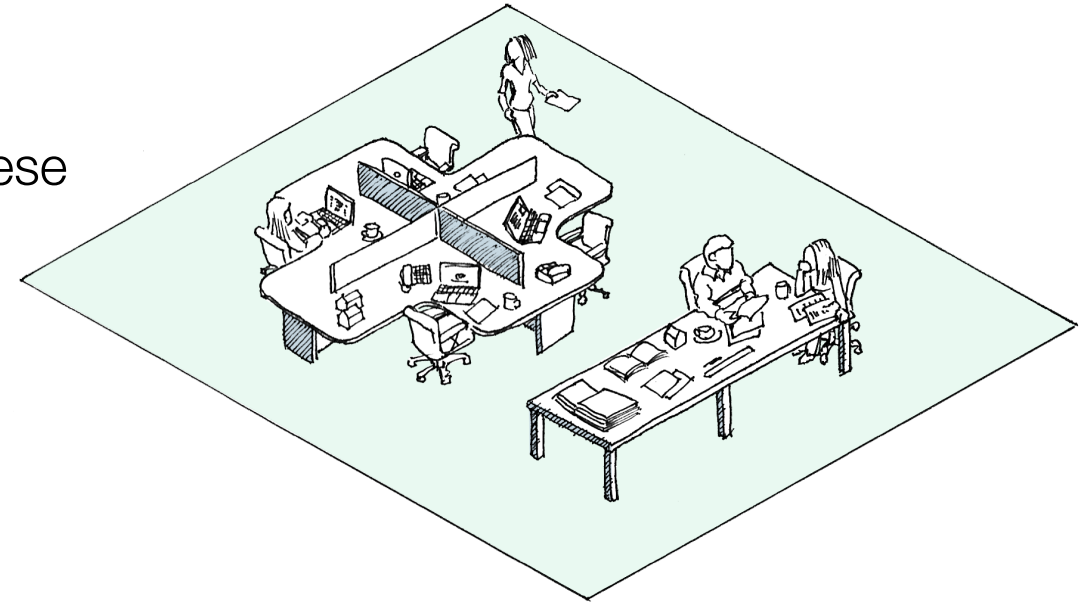


3. Project management

Developing projects consumes resources. These include financial and technical resources,

Man hours are also a major consideration.

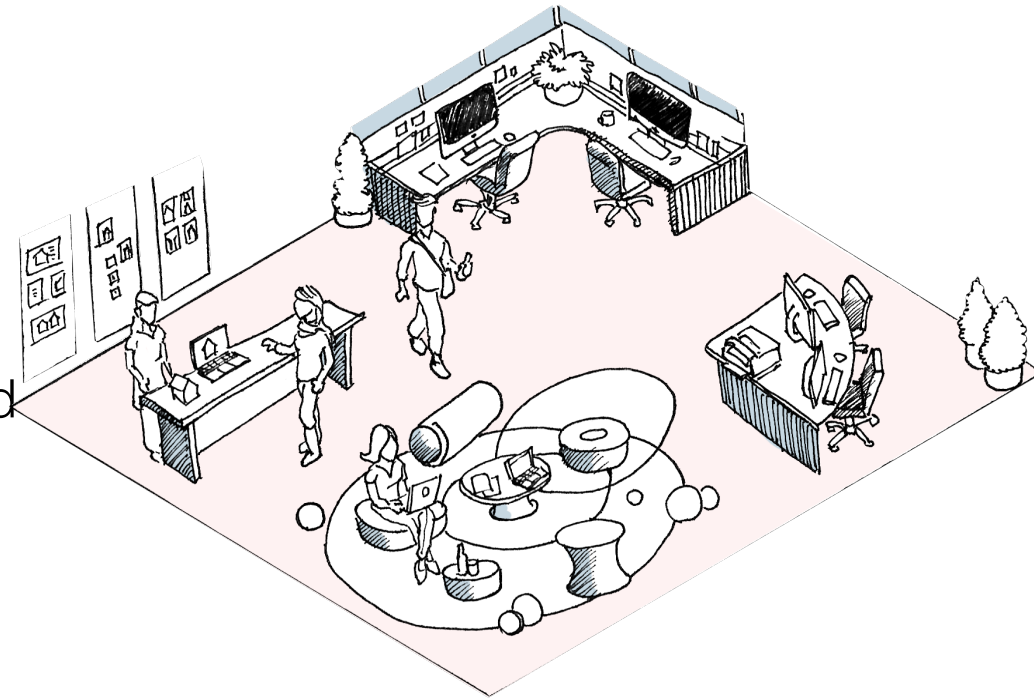
Effective project management consists of optimising these variables.



4. Design

Whether you are launching new products or a new service or designing a new organisation, between the initial idea and the implementation stages, there is always a design phase.

Transforming ideas into reality is an essential step and requires technical as well as methodological resources and sometimes IT support.

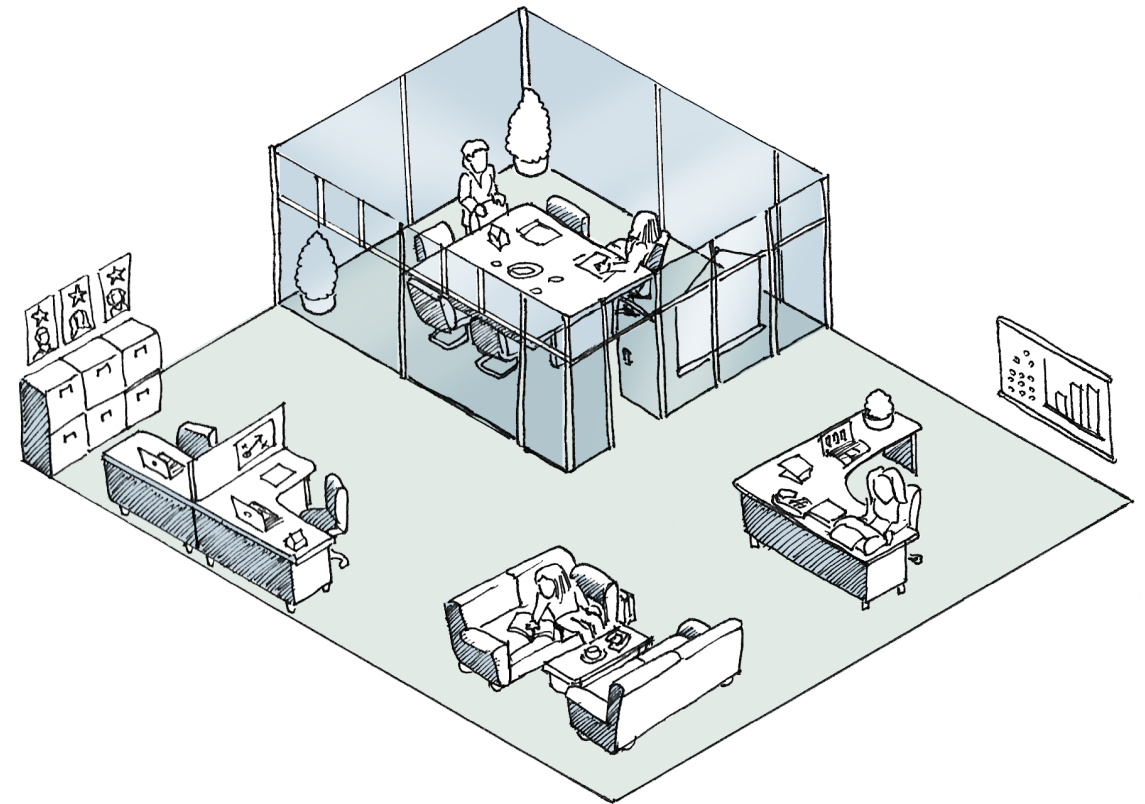


5. Human resource management

Encouraging risk-taking, developing internal skills and managing change are all necessary factors in developing an innovation culture.

Maybe less micro-management; planning, organising and coordinating ?

More leadership; inspire, motivate and encourage?

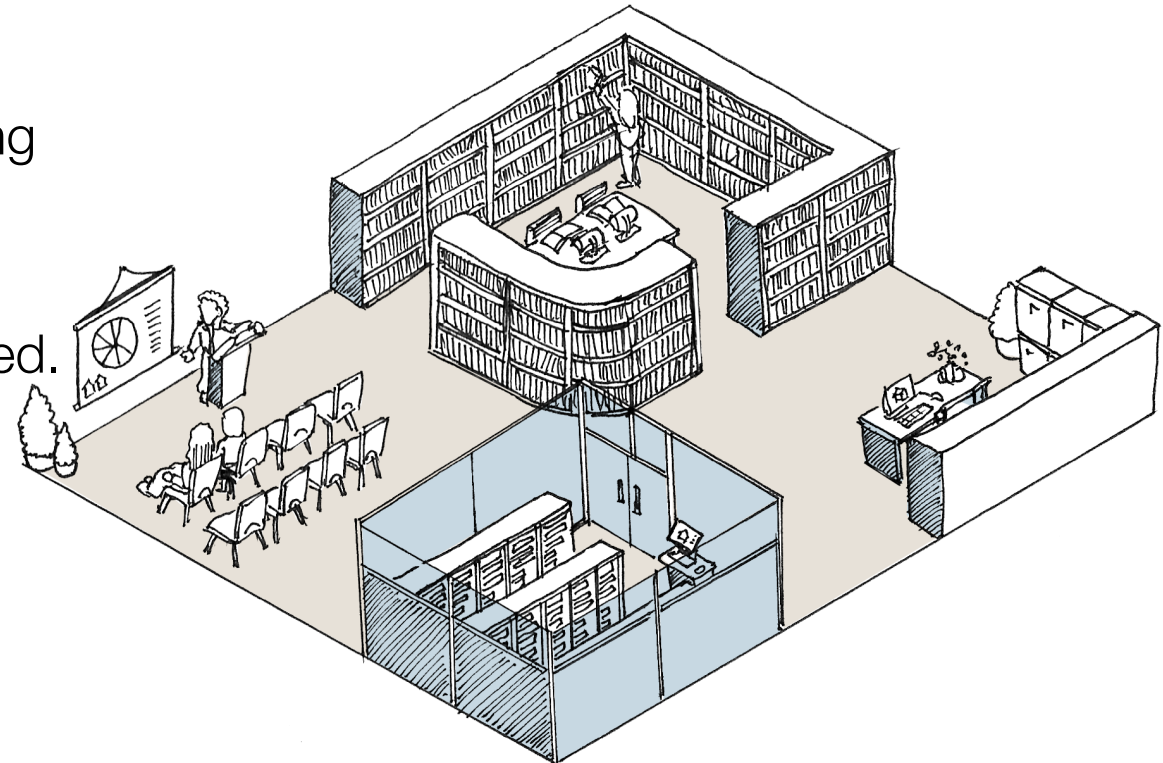


6. Knowledge management

Often overlooked, Knowledge Management is key to developing an effective innovation mindset.

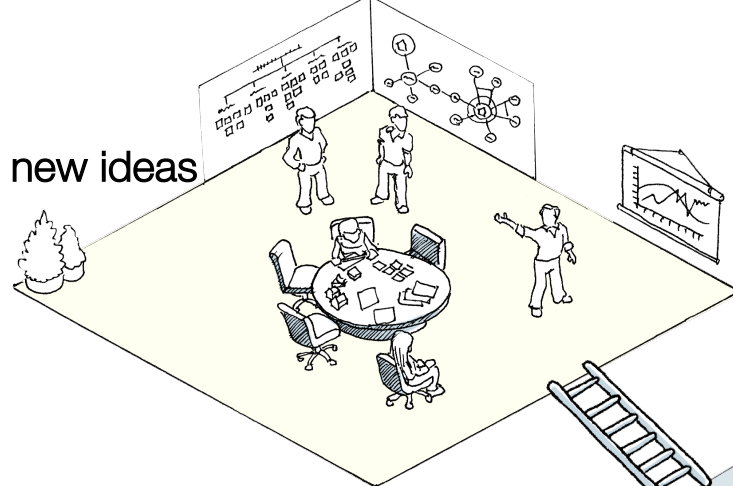
By definition, innovation consists of doing something which you did not previously know how to do.

Innovation and learning are therefore intimately linked.

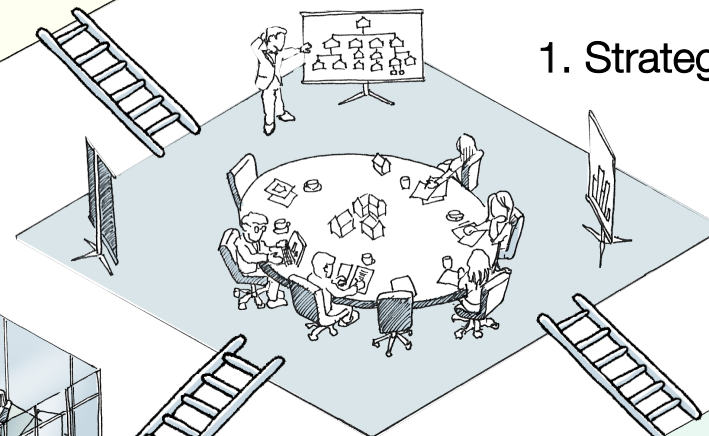


IDEAS

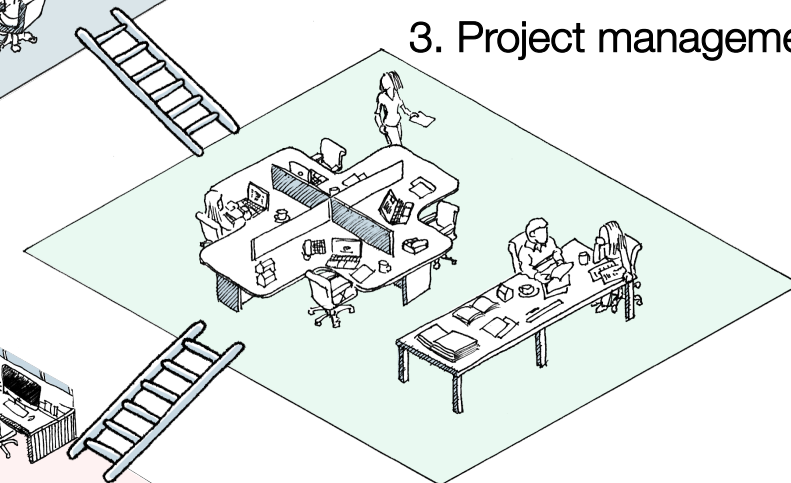
2. Generating new ideas



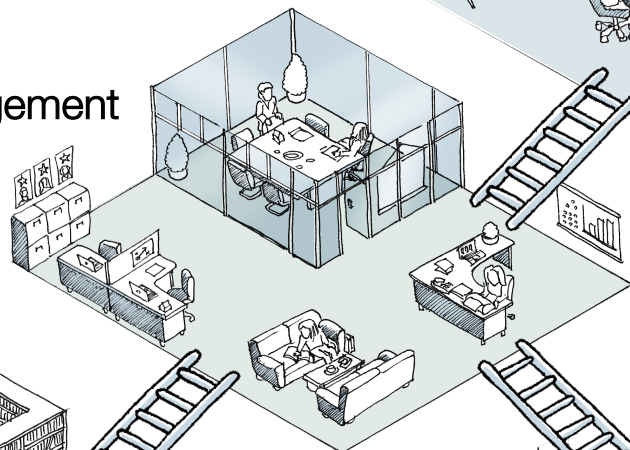
1. Strategy



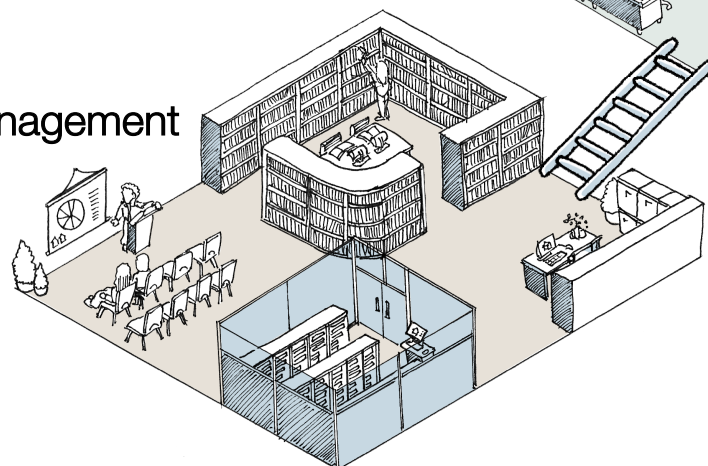
3. Project management



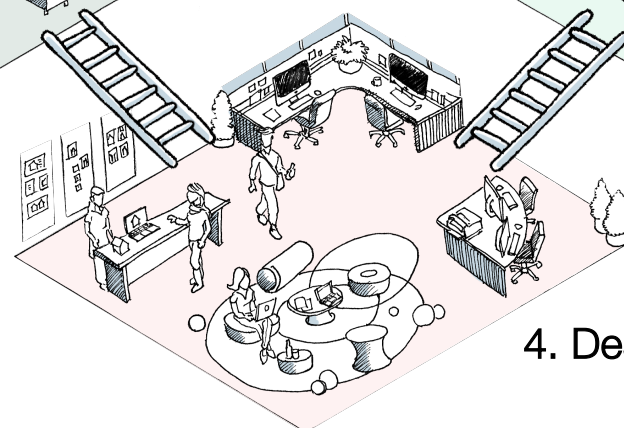
5. Human resource management



6. Knowledge management



4. Design



Next Week 'Session II' –

Making Good Use of our Library

Emily Hywel- Academic Liaison Librarian

Typology of Innovation

Professor Alan Lewis

Our first look at the word innovation

– and what does it mean!