



WISE

campaign for
gender balance
in science, technology
& engineering

Women in Innovation Knowledge Sharing Event



WISE 2019

Contents

Introduction	2
Speakers Summary	3
World Café Round Table Discussions	6
1. Remove silos to facilitate a flow of ideas	7
2. Allow time for employees to work on projects/ideas outside of their day-to-day jobs	8
3. Encourage role models to become visible within the organisation in order to attract women into innovation and technology roles	9
4. Establish flexible working strategies to help promote innovation	10
5. Provide clarity on the organisation's innovation strategy	11
Acknowledgements, References & Reports	12

Women and men are equally creative but women remain under-represented in many areas. What can be done to foster more inclusive innovation ecosystems in which both men and women thrive?

In a recent report on Women in Innovation, 31% of interviewees said that being a woman had negatively impacted their career in innovation¹. The same report established that funding, convincing others, finding partners and finding time were the biggest barriers to many female innovators bringing a new idea to market.

Questions about the perceptions of future challenges and barriers to innovation identified four main internal barriers in corporate companies (time, funding, skills/resources and ability to scale up). A lack of change in culture in larger companies and the perceived glass ceiling also discouraged women from pursuing a new project.

With many companies now recognising the importance of innovation as a way to keep ahead of competitors, the question being asked now is *"What can be done to help foster and increase female innovation both internally in a corporate environment and generally within the UK?"*



1. PWC Innovation Benchmark, 2017

Speakers



Sarah Chapman
EMEA Application
Engineering Manager,
3M



Daryl Bradley
Head of Patent
Prosecution,
Arm



Jonathan Griffiths
Strategic Adviser,
AWE

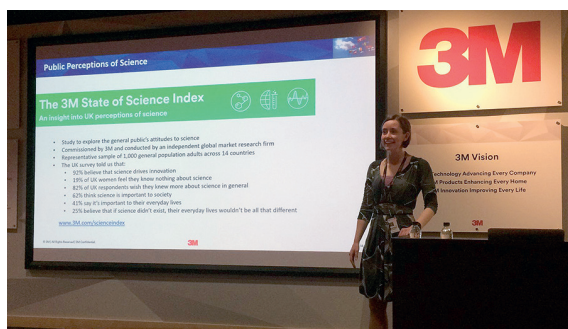


Marisa Smith
Lecturer,
University of
Strathclyde

On 31st January 2019, WISE opened its latest members-only Knowledge Sharing Event *Women in Innovation*. The event was very kindly hosted by 3M at its Bracknell offices and looked at the problems facing women in technological and industry roles with a specific focus on innovation.

The participants heard from Sarah Chapman (3M), Jonathan Griffiths (AWE), Daryl Bradley (Arm) and Marisa Smith (University of Strathclyde) about the challenges facing women in industrial roles, the increased push from organisations for individuals to become more innovative and the initiatives that their organisations have undertaken to encourage a stronger focus on innovation.

Sarah Chapman



Sarah opened the meeting with some shocking statistics as measured by 3M's State of Science Survey², conducted by an independent global market research firm. While 92% of UK respondents believed that innovation drove science, a shocking 25% believed that if science didn't exist, their lives wouldn't be too different and 19% of women felt they knew nothing about science. This emphasises the need for improved communication around the area of innovation and science generally.

"The mistakes that people will make are of much less importance than the mistake that management makes if it tells them exactly what to do."

William L McKnight President of 3M, 1929-1949

Sarah highlighted the importance of learning from your failures – "to succeed – you need to double your failure rates". 3M offers all staff the freedom to step forward and innovate on their own time – up to 15% of their working week can be spent on projects outside their job description – company resources can be used and there is no need to justify time to management or anyone internally.

Employees highly value their "15% time" and it leads to a culture of trust and loyalty. Sarah also highlighted the importance of collaboration within the organisation – 3M have 46 technology platforms which are owned centrally – there are no internal silos or excessive structure and the result is a highly innovative and supportive culture.

2. 3M Global Survey into the State of Science Index

Daryl Bradley



Daryl continued the innovation theme with his presentation on the importance of demystifying patents and clarifying IP rights if the innovation process is to be improved. He highlighted the advantages (protection against theft of ideas/territorial rights) and disadvantages (public access/cost/difficulty in protecting) of patenting and talked through the importance of recognising when is the right time to patent, and whether it is always worth doing. He also covered the important fact that not all ideas are patentable (music/written word) and need to be protected in other ways, i.e. through copyright agreements.

Daryl also spoke of the importance of sharing ideas within the company – 'Arm Ideas' was set up 9 months ago – the company was keen to make sure it did not become just another suggestion box – it is important to recognise new ideas and act on them rather than just losing them in the system.

Jonathan Griffiths



Jonathan talked about the rather unique situation surrounding AWE and innovation generally – as a defence organisation which relies heavily on the importance of not sharing information externally, it is difficult to be generally open beyond the physical boundaries of the company, however, he emphasised that AWE recognises the importance of innovation and process improvement and is making efforts to incorporate changes internally where possible.

Jonathan talked about the internal changes being made at AWE – there was a need to recognise that more headroom had to be made to allow employees to effectively contribute. AWE works very well at solving immediate problems and generating big ideas but doesn't always do so well when it came to big cross-functional projects and turning small/medium ideas into value.

Jonathan talked about the ways in which AWE is addressing these gaps – by empowering staff with an Innovation Toolkit, encouraging a pipeline of ideas and encouraging visibility of the wider portfolio available to staff, addressing challenges such as the difficulty of aligning innovation with the business strategy*, and facilitating and co-ordinating communication within the business as a whole.

Jonathan also talked about the success of their new intranet, "Hello Innovator", intended as an internal collaborative discussion board – all entries are visible to the whole business and it has encouraged significant discussion and increased sharing of ideas across the company as a whole.

Marisa Smith



Our final speaker, Marisa, spoke about the importance of open innovation, the differences between the open and closed model of innovation and the importance of recognising that sometimes, it's not always possible to have the best experts in-house. She talked through models of open and collaborative innovation, including crowdfunding websites, network innovation and co-creation, and the importance of being well organised internally first if open innovation is to succeed.

Marisa also covered the key strengths of open innovation generally – the ability to share risk, reduce development costs and improve financial capabilities across projects. Speed to market is also often improved as part of a collaborative network. However, she recognised the importance of some companies not being able to share information, others reluctant to lose IP rights, and the struggle to agree on financial matters. She concluded with the important message, though, that sometimes, the risks to a patent or loss of sole ownership, may be well compensated by the size of the resultant market and the share of the rewards.

World Café Round Table Discussions



The presentations were followed by a round table discussion among the attendees on several key topics that have been identified as crucial to helping organisations be more innovative whilst continuing to promote innovation as a career suitable for women.

Attendees were asked to discuss specific topics and a detailed summary of the discussions can be found in the following pages.

1. Remove silos to facilitate a flow of ideas

It is widely recognised that structure is required in order to manage companies effectively – key attributes to keep a company competitive and on track. Structure also acts as a defensive position to safeguard the company against risks. However, the downside of too much structure is the loss of flexibility to innovate effectively and quickly and too many regulatory constraints that are not always necessary – all of which stifles innovation and creativity.

Many companies use these regulatory aspects to keep the workforce in place and stop them making mistakes – this fear factor can be taken too far, though, and leaves no channels to challenge and empower new ideas. Often companies will offer a temporary solution through the addition of a ‘suggestion box’ but this channel is a highly stifled way of trying to adopt or gain recognition of new ideas – particularly as it often has to pass through many different levels of management, all of whom have their own unconscious biases as to how and why an idea may or may not work.

Jonathan Griffiths of AWE spoke of his company’s new policy to have an internal intranet in place for new ideas – ideas are posted on a communal online channel which everyone has access to – everyone can comment and offer suggestions. This is another way of offering a ‘suggestion box’ which removes the unconscious bias inherent in the traditional method.

Limited funds and resources mean that not every company has the capacity to encourage changes on a big scale – don’t always assume that innovation has to be on a large scale. Just fixing that one small issue that makes everyone’s life a misery counts as innovation!

Having a good strategic direction, positive culture and decent mission statement, many people will understand the need for specific restrictions. Communication is key to gaining staff loyalty.

Conversely, having a corporate identity that is too stifling will reduce the adoption of innovative improvements – employees will feel

that they have a big fight on their hands to get their ideas across and fear, dissatisfaction and apathy may set in.

Another big problem with too much corporate structure is the increased chances of a company forming silos internally such as different projects or multiple departments. Silos are a big barrier to communication and most truly innovative companies work hard to break such barriers.

“If you put fences around people, you get sheep. Give people the room they need.”

William L McKnight President of 3M, 1929-1949

How to encourage innovation without removing necessary corporate structures or processes:

- Open a ‘Suggestion box’ which is open to all to view and comment on with an open balloting process.
- Set up a mentoring or reverse mentoring programme – gain the true perspective of how and why people want to change something.
- Fix just one small thing. Don’t make everything about a big corporate programme. Make it easy to make small changes which improve everyone’s life.
- Communicate your strategic directions and mission statements – make everyone feel valued and committed to your company’s direction.
- When challenged, be open about why restrictions are in place – review whether they are truly required or could be changed.
- Review the need for regulatory requirements. Are they all still valid and required?
- Break down silos to improve innovation.

2. Allow time for employees to work on projects/ideas outside of their day-to-day jobs

Sarah Chapman from 3M highlighted in her presentation the 15% culture at 3M (the idea that all employees are entitled to spend up to 15% of their working hours working on anything that interests them – they are entitled to use company resources, do not need to justify their time to their managers and do not need to even say what they are working on – it does not even need to be anything associated with their work). Employees value their “15% time” and it is seen as a massive incentive to stay with the company.

There were a wide range of responses from our attendees about how innovation could be more rewarded. Some posited that public and peer recognition was more important than money rewards and others emphasised the importance of recognising more than just the number of patents. As one respondent put it, “Patents DO NOT equal Innovation”. SMEs in particular struggle with the costs and investment required to patent products – are there other ways to recognise their contributions?

A key finding during the discussions (and presentations!) was the importance of recognising that a failure to succeed is often the quickest route to innovation. If your company cannot allow for failure, then it will not innovate – employees will not take risks when there is any potential for career damage.

Training can often be used as an incentive to succeed. Grants and monetary incentives for teams to improve their working conditions or work on an additional (potentially non-profit making) project can build team success and encourage innovation. All these small changes help to build a unified workforce that feels pride in their work and pride in their workplace. Innovation will often follow naturally.

What can be done right now to recognise and reward innovation in your workplace:

- Say “Thank you”! Recognise all contributions – both small and large.
- Nominate innovative staff for awards and recognise their contributions.
- Recognise process innovation as well as product innovation – how have simple contributions improved your company and processes?
- Instill a company reward scheme (badges, medals, notes in minutes, certificates, awards, dinners) or as one attendee offered... pizza!
- Recognise the importance of learning to fail and offer a safe place to do so.
- Offer training as a route to increased success.
- Create a structured career progression route that does not purely rely on managerial recognition of an employee's successes.
- Create an employee network to recognise successes and share successes (or failures!).
- Promote motivated employees externally – share their career and motivations on social media or websites.

3. Encourage role models to become visible within the organisation in order to attract women into innovation and technology roles

The lack of role models was identified as a substantial issue causing many women to doubt their ability to succeed in specific operational areas. Media representation was also identified as an issue as was unconscious bias in the recruitment process (particularly for older generation employees who have a set mindset and distinct ideas 'on how things should be run'). The drawbacks of an inflexible culture around the issue of women wishing to have both a career and a family was also noted. Complacency and simply accepting the status quo among middle and senior management was also discussed.

Of particular interest was the fact that many of these issues do not simply affect women - dated mindsets about men leaving early for school plays, to help with parental leave, or covering childcare issues - mean that many men see taking time off work for family or personal reasons as something that is easier for a female to achieve. This results in women often bearing the brunt of childcare which can severely affect their career prospects - especially when weighted against old-fashioned promotional mindsets or managers that do not appreciate the complex issues often surrounding a request for more flexible working hours.

A severe lack of high-quality career advice was particularly seen as a problem to getting more females to consider a STEM career. This was highlighted as a national issue, with poor quality advice being given in schools and many youngsters being discouraged from a STEM career (both male and female). The importance of dispelling myths and improving access to and visibility of positive career role models of all ages was highlighted as a critical necessity to improve conditions.

What can be done right now to encourage more women into technology roles:

- Promote positive role models within your organisation.
- Share experiences with younger generation.
- Share excitement and passion about STEM careers.
- Register as a STEM Ambassador.
- Register your company's Role Models on the My Skills My Life site with WISE.
- Train recruitment staff (and interviewing managers) about the importance of recognising Unconscious Bias and how to deal with it.
- Discuss options to improve (where possible) flexible working conditions for all to enable more women to have a long and fulfilling career in STEM occupations.

4. Establish flexible working strategies to help promote innovation

A key point that was recognised immediately by many attendees was the fact that flexible working does not work everywhere in the organisation – i.e. 24/7 manufacturing or night-time shift patterns.

It is important to recognise their contributions and take account of them when formulating a flexible working pattern. There is the potential issue of mishandling it and causing a ‘have/have not’ culture. Another way to look at this difficult situation is having the ‘flexibility to find a work environment that fits the need of your working patterns’. Could the employee find a suitable alternative that would fit their working life?

Flexible working requires an environment that is supportive of the employee and offers trust and appropriate technology to support it. It is increasingly recognised as a valuable employee benefit, particularly when looking to recruit parents of younger children or those needing time to look after family. If everyone demanded flexible working policies, it has the added benefit of reducing negative perceptions, which could be crucial to reducing work stresses and demands, particularly on men.

To recruit top talent, it is crucial to be more agile in your thinking and strategy and flexible working patterns are a key part of encouraging more innovation – particularly when it comes to females who are looking to return to a job or balance the needs of family life against a career.

Attendees also recognised the important point that not all flexible working is to do with hours and times. Consider unusual ways to work flexibly – whiteboards in the canteen, meeting areas in the corridors, free breakfast on a Friday. All of which encourages networking, communication and more face to face contact.

Another point made by attendees was the importance of thinking about part time workers and how to ensure they feel part of the company. Many companies offer reduced hours on a Friday or a free incentive. Part time workers are most likely to have one of the days adjoining

a weekend as their time off – if the employee incentives (or company meetings!) are always held on a day they are out of the building, they can feel isolated and lonely.

Flexible working also offers the added bonuses of increased loyalty to the company, less stress in the workplace and a better working environment overall.

Ways to improve flexible working and encourage innovation and loyalty:

- If traditional reduced hours or reduced days will not fit the work schedule, think of other ways to recognise a request for flexible working such as a temporary work placement elsewhere, re-training for another job, or simply, unpaid leave if required.
- Consider offering a Returners Programme to encourage STEM trained females back into industry. Flexible working policies are often critical when considering such options.
- Consider each request on its own merit, not against a set ‘standard’ that works for one part of the company and not for another.
- Not all flexibility requirements are in the form of hours – offer a free breakfast or coffee and pastries for all employees on a Wednesday (Monday and Friday are the most common days off for part-time employees); put whiteboards up around the office to capture and share ideas; set up an online intranet or support network.
- Offer free days off to attend your child’s school play, do some outreach, offer community support...

5. Provide clarity on the organisation's innovation strategy

Very quickly, attendees picked up on the fact that 'innovation' can be a catch-all word which has multiple meanings. What is the difference between 'innovation' and 'invention'. The very word innovation was seen to be associated with 'white, male, 50s characters'. It automatically feels like a 'big' word that no-one wants to define.

Many employees were cautious of the fact that the word innovation is used too generally. If someone is asked why they are not more innovative, it automatically sets a marker in their mind that they are not seen as innovative to begin with. There was also the concern that many people are innovative every day, but don't recognise themselves as being so and importantly, are not given recognition for achievements.

Again, the fact that innovation is not always about a product or solution was bought up as key to understanding the stigmas surrounding the word. Staff do not always feel that they have permission to speak up about changes that are required or seen as necessary for fear of being laughed out of the room or dismissed out of hand.

Companies also risk sowing 'innovation fatigue'. Innovation is automatically seen as a huge step towards a bigger product, a bigger result, or a bigger profit rather than the more likely series of small improvements which over time will result in those bigger wins. Staff are reluctant to start an innovation improvement program as they automatically feel cowed by the need to set a specific start and end point.

'Innovation' is always seen as 'risky' and women in particular do not like to fail and are fearful of change – they see failure as a potentially career limiting move, particularly if they have been offered other 'incentives' such as flexible hours or part time work which they value highly enough to not want to 'rock the boat'. Once again, the need for the company to trust employees to do their job properly without constant monitoring and interference is a huge

factor in the success of encouraging females to be innovative.

Encouragingly, businesses with a well established diversity programme are seen as less risky places to innovate – women are confident in their place in the company and have the confidence to risk failure and move in more innovative ways than a more traditional company would allow.

Encourage more women to take risks and be 'innovative':

- Define the word 'Innovation' for your organisation and department. Once defined, it becomes a lot less scary and more attainable.
- Establish trust within your organisation. Women will only begin to take risks when they are sure of their position within the organisation and sure of the fact that failure will not result in career limiting demotions.
- Get everyone on the same page. Make sure men understand why women may not be as keen to take risks and what they can do to be supportive.
- Recognise small steps as rungs on the ladder to success. Innovation is often resisted because it's seen as 'too big'. Set attainable goals and define strategy.
- Help everyone to understand that failure is a natural part of innovation. If you can't accept failure, you will struggle to innovate.

Acknowledgements, References & Reports



WISE would like to thank all the speakers, attendees and staff who made the *Women in Innovation KSE* so successful. Thank you for attending and contributing.

Special mention must be made to 3M for their very generous offer to host the event and the tours round their Innovation Centre. The 3M Innovation Centre has rooms and labs available for local schools and businesses to use for school outreach (subject to availability).

Please contact John Klee for more information: john.klee@mmm.com



References

1. PWC Innovation Benchmark, 2017
<https://www.pwc.com/us/en/services/consulting/innovation-benchmark.html>
2. 3M Global Survey into the State of Science Index
www.3M.com/scienceindex

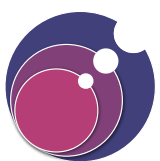
Reports

Women in Innovation – Report 2016 – Innovate UK

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/545202/Women_In_Innovation_Ebiquity_Report_August_2016_FINAL.pdf

World IP Day 2018 – Blog Post - Women in innovation and creativity

<https://ipo.blog.gov.uk/2018/04/26/world-ip-day-2018-women-in-innovation-and-creativity/>



WISE

campaign for gender balance
in science, technology
& engineering

WISE
Leeds College of Building
Hunslet Campus
Cudbear Street
Leeds
LS10 1EF

T: 0113 222 6072
E: info@wisecampaign.org.uk
www.wisecampaign.org.uk

WISE Campaign is an independent
Community Interest Company
Company No. 07533934
VAT No. 136551320
Copyright © WISE 2019