

Designing systems for driving healthy behavioural change in the workplace.

Workshop findings and results

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Designing systems for driving healthy behavioural change in the workplace.

Large organisations are increasingly seeking evidence-based approaches to driving positive behaviour change in the workplace. This is particularly true of the Oil & Gas industry with its productivity challenges and critical dependence on the right individual actions. The Workshop at Aberdeen University brought together experts in the science of behaviour change, health technology interventions and social networks, to discuss the latest research and thinking in designing systems for driving healthy behaviour change in the workplace.



The Science of Behaviour Change

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Health behaviours

Before setting up a behaviour change intervention, it is important to define which behaviour should be targeted. There is a wide range of health-relevant behaviours that can take place at the workplace, including behavioural immunogens (behaviours that contribute to better health and should therefore be promoted) as well as behavioural pathogens (behaviours that contribute to ill health and should therefore be avoided).

Examples of potential health behaviour change interventions, as mentioned by our participants:

- Create a health-inducive environment
- Prevent overworking, including self-imposed breaks
- Improve access to drinkable water
- Reduce sedentary working
- Improve access to healthy food, reduce snacking, provide healthy foods in vending machines where possible
- Identify health needs of employees and tailor the environment and practices to them (e.g. diabetes, pregnancy)
- Check in with staff regularly about health and wellbeing (e.g. daily check-in)
- Give staff the ability to take medication inconspicuously

Trends in employee health

- Over time, there is a decreasing trend in work days lost to ill health
- The main reported causes for missing work in the UK are stress, anxiety, depression (c. 13 MM days) and musculoskeletal problems (c. 7 MM days). The anxiety and depression are likely underreported, with people reporting flu or other physical health problems instead of the real issue
- It's important to build healthy leadership – 1 in 3 people think of quitting because of a bad relationship with a colleague or a manager
- Open plan offices, while popular, can be detrimental to mental health, especially for people who are sensitive to noise

Insights from participants:

- From a purely regulatory point of view, companies don't have a duty to prevent stress or anxiety, unless an employee has been diagnosed with a mental health problem, and they have been notified. The Mental Health First Aid, while valuable does nothing in the face of processes that are stressful or anxiety-inducing by design (e.g. if someone finds out that a complaint has been filed against them, they are forbidden from talking to anyone about it)
- The provision of standing desks is a popular intervention for improving musculoskeletal health, but the desks are not taken up by all employees
- Open plan offices seem to be working reasonably well, at least in some companies
- Some workplaces have free fruit available every day in the kitchenettes, though it's not always the best quality. No information or behaviour change campaign was delivered to accompany the introduction of free fruit, but perhaps it wasn't necessary as the fruit disappears quickly.
- Some workplaces have a subsidised canteen in the building, selling affordable food, including soup and salads.
- Some companies have a wellbeing allowance available to employees, this can be used to pay for a gym membership, spa, etc.
- The effects of the interventions available are often not being measured in any systematic way.
- If an intervention is being introduced, it should be accompanied by an information campaign to keep people informed.

Psychological models of behaviour change

- The intuitive model of behaviour change (Knowledge -> Attitude -> Behaviour) does not work.
- We need a more nuanced understanding of theory to guide interventions. Figure 1 shows an example model, using the Theory of Planned Behaviour (Fishbein & Ajzen, 2011) with interventions bridging the intention-behaviour gap.

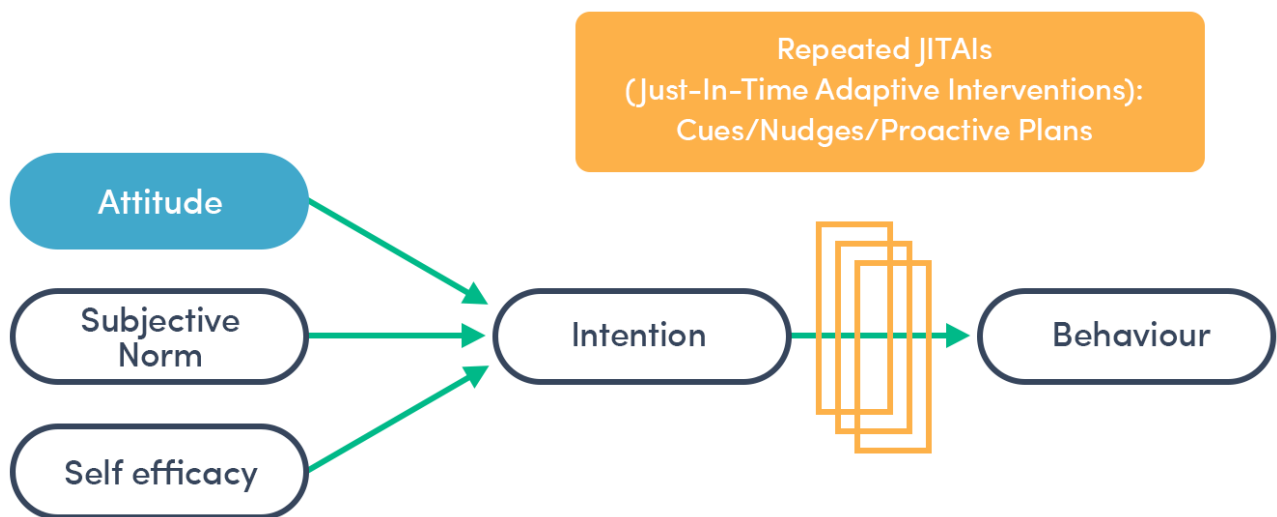


Figure 1. Theory of planned behaviour with just-in-time adaptive intervention components such as cues, nudges, plans added to bridge the intention-behaviour gap.

Insights from evaluations of behaviour change interventions

- Interventions often help in the short term, but then people go back to baseline
- Communication is personal and may need to be tailored to different (groups of) people
- The people who choose to take part in intervention programmes are often the 'worried well' rather than those who really need to change their behaviour
- Small changes can make a big difference (e.g. replace sugary snacks with fruit or nuts)
- A lot of money is being spent on wellbeing interventions in the workplace, but we don't necessarily know if they work. Careful evaluation is needed to establish whether interventions have the desired effect on the population of interest.
- It is important to evaluate any interventions that are introduced in the company - do they work, and who do they work for (there may be particular groups that are susceptible or resistant to the intervention)

Additional insights from participants:

- Different wellbeing campaigns have been tried in the companies, but they often rely on information only, and the behaviour changes back to baseline when the campaign ends (e.g. wellbeing month – lunchtime walks were organised for a month, but once the month ended, no one continued going for a walk at lunchtime)
- On an organisational level, success often gets celebrated with alcoholic drinks, pizza, or doughnuts. This could be changed to include more healthy equivalents (fruit, active team-building activities)
- Team leaders can help with dissemination of behaviour change. Individuals are sometimes willing to lead change, but their confidence eventually wears off.

References:

Fishbein, M., & Ajzen, I. (2011).

Predicting and changing behavior:

The reasoned action approach. Psychology press.

Health Intervention Technology for the Workplace



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Health Intervention Technology for the Workplace

Welbot presented the strategic framework developed by the NHS, which organisations can use to plan and implement their own approach for improving staff health and wellbeing.

The NHS framework can be found [here](#)

The Welbot application helps businesses deliver Health Interventions in the workplace, as envisaged in the attached NHS framework.

Welbot's relationship with universities is based on the fact that our technology is evidenced based in its development.

At its inception, the design and development of the product was rooted in science and research. As the product further develops, Welbot continues to be guided by the results of trials conducted by the universities, as well as input from customers and users of our application.

Welbot has worked primarily with three universities; Aberdeen University and Edinburgh University on Behaviour Understanding and Strathclyde University on Health Interventions.

Aberdeen University and Edinburgh University

The projects with the two universities explored the application of behaviour change science and theories to digital intervention technologies. The universities were able to provide research and insights on how users of applications like Facebook interact with the digital application and the ways in which users can be influenced to change their behaviours and habits.

Health Intervention Technology for the Workplace cont.

These insights on user behaviour included;

Conversation - how tone and language can be used to create an engaging and continuing dialogue

Context - how better understanding of the user can lead to more targeted interactions. This includes product intelligence, as well as understanding the wider culture and social norms.

Agency - how providing users with greater control creates a more binding and sustainable relationship.

Authenticity - how trust in a product can create an honest and empathetic relationship between a user and a digital product.

Strathclyde University

The project with Strathclyde focused on understanding the ill effects of our modern workplaces and the type of health interventions that can address these health issues. The hypothesis and technology developed were then validated by research study and using real world trials.

The health issues of the modern workplace centres around sedentary workstyles, mental health, hydration and nutrition.

Discrete interventions were researched and developed, which blended into the way people worked whilst addressing the health issues that had been identified.

The technology product developed from this research was then subjected to a prolonged study.

The major headline from the Strathclyde research study is that users of Welbot experience a marked psychological improvement in their DASS measure, which is a scale designed to measure the three related negative emotional states of depression, anxiety and stress.

Sectoral and Corporate Insights

- Employees in the Oil & Gas sector are under heightened pressure to perform, producing increasing stress. This is due to staff cuts, increasing workload, tight deadlines and social norms.
- Health and Safety (H&S) is of fundamental importance in the sector, but wellbeing is still in its infancy. As wellbeing is mainly covered by the H&S department and not HR, the challenge will be to move from the risk-based approach of H&S to the more benefit-based approach of wellbeing.
- Wellbeing does not always have a board-level focus, with one company only recently making wellbeing a strategic issues after a recommendation from its auditors.
- Not all companies currently use technology solutions in the area of staff wellbeing. Where tech is used, its normally passive in the form of a portal or mobile app, which requires the user to seek information or input data. These technologies are normally introduced to new starters, but have limited engagement after a few weeks and months.
- Some of the companies in the sector are using wearables to help manage employee health. For example, one of the companies uses a ready-band to monitor fatigue. The same company does a global challenge using technology, which is points based.
- None of the participants currently use a desktop intervention technology like Welbot, but it was recognised that this could be of great benefit to employees in the sector.
- The daily interactivity of an application like Welbot, means its accessible, engaging and integrated into how people work, rather than a destination site or mobile app that you engage with only on a need to basis.
- The regular reminders in Welbot were deemed to be very useful. Some organisations have done a good job of informing their staff of healthy practices and provided them with an environment and workspace to facilitate this, including sit / stand desks. However, these practices are usually not followed and reminders could therefore be very helpful in keeping them top of mind.
- Another benefit of intervention technology like Welbot is that it is visible and shows that a company cares about its employees. At the moment, some of the wellbeing programmes have a wishy-washy feel about them and have not had much investment.

Sectoral and Corporate Insights cont.

- Other than sickness reports, there are no mechanisms for HR in some companies to really know how well staff are doing. For example, most organisations will not really know how many people have mental health issues or the profile of these people.
- The reports produced by Welbot, at the individual user levels and aggregated anonymised level, were therefore well received by participants.
- Participants really liked the insights from behavioural science that were incorporated into the Welbot product. One participant commented that conversational tone is important, as she found her Apple Watch prompts sometimes passive / aggressive in its tone.
- Another aspect of the behaviour science that was discussed is that of control and self-efficacy. It was noted by participants that given how intervention technology works, such individual control was important to stop the application becoming intrusive.
- Given the investment / ROI focus in the Oil and Gas sector, a clear connection needs to be made between wellbeing and the bottom-line, making clear how individual wellbeing programmes contribute to the bottom-line.
- It was highlighted that technology used on oil platforms had to meet higher quality and risk standards than those used onshore.
- It was also noted that, given many of the companies have overbearing IT operations, IT constraints can be a frustration when trying to implement new technology.



Social Network Analysis (SNA)



PSA

Social Network Analysis (SNA)

Social Network Analysis (SNA) is a process for investigating social structures through the use of networks and graph theory. It has emerged as a key technique in modern sociology and gained a significant following in information science, organizational studies, political science and public health.

SNA characterizes networked structures in terms of nodes (individual actors, people, or things within the network) and the ties, edges, or links (relationships or interactions) that connect them. These networks can then be visualized through sociograms in which nodes are represented as points and ties are represented as lines. These visualizations provide a means of qualitatively assessing networks by varying the visual representation of their nodes and edges to reflect attributes of interest.

Examples of social structures commonly investigated through social network analysis include organisational networks, social media networks, information networks, friendship networks, business networks and knowledge networks. PSA's interest is focused upon organisational networks and, in the first instance, flows of communication, advice and trust.

Our aim is to help organisations identify and make the most of the informal networks that inevitably exist within all teams and groups. Effective informal networks facilitate the exchange of accurate information about who does what, who knows what, and who needs what, in order to enable greater productivity. But equally, they also assist the exchange of ideas that can feed innovation.

In our experience visualizing and analysing these informal social networks helps organisations to:

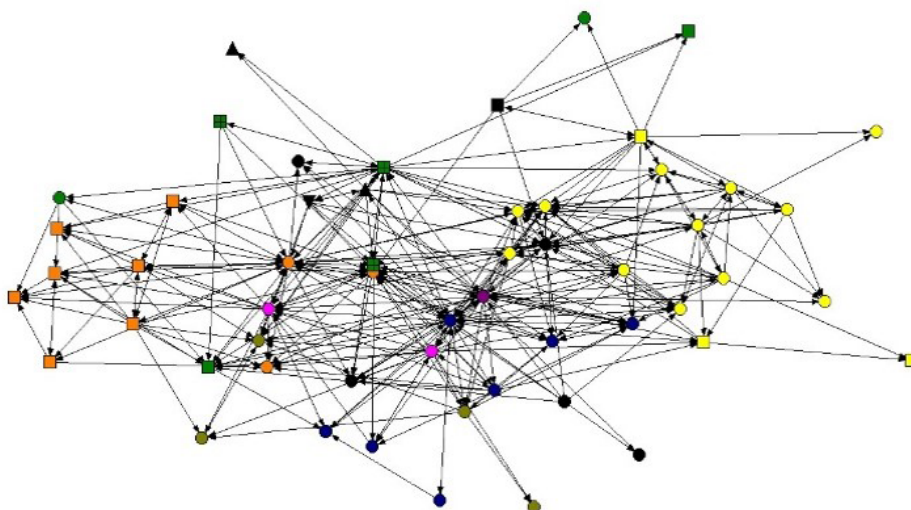
- Better lead and manage change.
- Efficiently target scarce resources.
- Challenge the silo mentality.
- Restructure the formal organisation to complement the informal.
- 'Rewire' faulty networks to achieve goals.
- Deepen the quality of relationships among staff.
- Reduce transactional costs (e.g. micro-managing and second guessing) by deepening trust.

Workshop findings

In the context of the oil and gas industry it was fascinating to hear about the particular challenges and possible solutions SNA would offer:

Visual Impact

The visual impact of social network diagrams is particularly powerful, because it would make one's intuitive and implicit understanding of the social network absolutely explicit. We often know something is wrong but are unable to 'put our finger on it'. The visualisations of team or organisational networks would allow us to pinpoint where communication breaks down, where information is not shared, and where key relationships are brittle.



Quantitative Data

SNA provides quantitative data of the largely qualitative and hidden aspects of organisational relationships and information flows. For example, it would highlight what we know about the lack of 'trust' between departments, but crystallise it in a way that helps us do something about it, by identifying where gaps need to be filled and trust built through follow up interventions.

Anonymity

Anonymity of respondents is clearly an issue, but even without naming individuals a picture identifying fractures in a team or organisation would still provide a significant incentive for action. The picture alone of a disjointed network would provide the basis for promoting ameliorating initiatives.

Workshop findings

Balancing the Hierarchy and the Network

SNA is not an attempt to replace the hierarchy, but seeks instead to reconcile them and make them more congruent. It would therefore be valuable for identifying and then reconciling the potential clash between the theory of policy/hierarchy with the practicality of operations/networks, which often leads to unnecessary 'them and us' conflict.

Change Champions

SNA would take the guesswork out of identifying change champions, by objectively identifying those individuals who know a lot of people in the organisation and through whom information therefore flows; those who are sought out for their knowledge and advice; and those who are trusted for their competence and integrity.

Multi-Site Organisations

SNA would be a powerful way to identify issues associated with multi-site organisations, where flows of information, ideas, advice and trust face the additional hurdle of geographical separation, whether this be between different cities, or simply on different floors or in separate buildings. SNA would illuminate the existence or lack of connection.

Further information

If you would like further information regarding any of the topics covered on the day, then you can contact each of the organisations below:



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