Article

Organisational Artificial Intelligence Future Scenarios: Futurists Insights and Implications for the Organisational Adaptation Approach, Leader and Team

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Abstract

The environments that organisations operate within are constantly adapting in response to external and internal stimuli. Artificial Intelligence will result in new challenges for both the ecology of organisations as well as the adaptation approach applied. This article outlines five themes and key insights generated after two dynamic futures research workshop processes conducted at the 4th Asia Pacific Futures Network Conference in Bangkok. Themes reflect the definition of AI linked to fiction and data, leader challenges around disbursing power structures and team formation taking on new forms of inclusivity. The adaptation approach to be one of guided, insight driven experimentation.

Introduction

Organisations are not without context and legacy; a disrupted environment means organisations start, adapt and flourish, or start, don't adapt, become insignificant or stop. Organisations and industries are evolving and adapting and have done so since the advent of the first business and trade business models thousands of years ago. Technology advancements have been the driver for many organisational adaptations. In previous eras, the human was at the centre to the concept of work. Work (formal or informal) brought a feeling of self - worth and effort was rewarded. Achievement or contribution brought greater capacity for social choice (Bussey et al., 2012; Lewin, 1947). Artificial Intelligence (AI) brings wide ranging and new adaptation challenges particularly for organisations with operating models, where humans are the main contributors to work flow and value creation. AI will shift this capacity and our deeply embedded structures and world views that underpin how we as humans live, organise ourselves and transact with one another.

The environment organisations operate within is a complex web of forces and dynamics. Forces include global economic uncertainty, regulatory control, shifting employee-employer relationships, empowerment-based value systems as well as geo-political and ecological disruptions. According to the World Economic Forum we are now in an era that can be termed the industrial 4.0 (Schwab, 2016). Within Industry 4.0, organisational processes and services are more digitized, cloud based, leveraging off the Internet of Things and cognitive forms of AI (Ashrafian, 2015; Jarrahi, 2018; Prisecaru, 2017; Schwab, 2016).

Many organizational future scenarios shifting as a result of the potential that AI can bring to their operating models. However, the full impacts and potential of AI on organizational ecology are not yet known. The benefit of applying futures methods and tools to uncertain environments can "encourage... the extension of thoughts and perceptions beyond the confines of the present" (Masini, 1998, p. 344). This article outlines insights

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that were generated after two futures research workshop processes, conducted at the 4th Asia Pacific Futures Network Conference in Bangkok (APFN). The workshop approach was structured according to Inayatullah's (2008) Six Pillars futures methodology. The overarching question considered in both workshops was 'What are organisational AI future scenarios and the related leader, team and adaptation approach implications?'. For adaptation of organisations to be successful, the ecology of organisations needs to consider any boundaries in the broader environment and ensure alignment and agency in the adaptation approach applied. Leader, team, system, structure, process, values and culture are all connected (Bridges, 2009; Connor, 1993; Kotter, 1996; Rogers, 1962).

Conference participants were invited to self-nominate to attend two workshops and in total 15 delegates participated across both workshops. The profile of the participants from a self-identified scan included:

- Aged 24-69 years.
- Self-identified nine males and six females.
- Organisational segments represented – human resources, manufacturing, technology, artificial intelligence, government, tertiary education and students.
- Country of origin – including South Africa, Pakistan, Malaysia, Taiwan, Australia, United Kingdom, Thai- land and Belgium.
- Leadership role versus team member experience – five participants filled formal leadership roles; all participants had experience in being a team member.
- Experience with Artificial Intelligence formally in organisational setting (formal rather than informal i.e. SIRI on their personal mobile) – three participants.

Due to the self-selection process and several other parallel conference processes, participants were not consis- tent 100% across both workshops. It is acknowledged that two workshop processes with 15 participants do not make a detailed empirical study. The insight generated from this study was rich in detail as a credit to the quali- tative, anticipatory and active facilitation approach within the workshops. Over 18 0 individual data units were shared by participants and captured across both workshops. Insight also contributes to the futures research field by using Anticipatory Action Learning theories such as the Six Pillars (Scenarios, Futures Triangle and Causal Layered Analysis in particular) to new fields of study such organisational adaptation to AI (Inayatullah, 2006). The workshop's intent was heavily participatory and exploratory creating insights that can be explored further through deeper and wider futures research processes.

Workshop Methodology

Within a rapidly changing environment, approaches to how we lead, create teams and adapt organisationally are being re-considered. Several strategic foresight approaches exist, each with the ability to be applied dynamically in public policy, strategic planning and change management contexts (Calof, Miller, & Jackson, 2012; Inayatullah, 2008; Ramos, 2003; Slaughter, 1996; Voros, 2003). Action research and futures research often are applied together; action research exploring the present, future research identifying futures and thus more predictive in nature. Ramos (2005) outlined the 'confluence' of futures studies and action research. He identified there was no one convergence of conceptual or theoretical components between the action-based research and futures research. Instead "each practitioner or practice will tend to modify their approach and the processes employed depending on the given circumstances and environment. Context is key" (Ramos, 2005, p. 10).

Inayatullah's (2008) Six Pillars Theory is an anticipatory action learning process and was used as the basis for the workshop design. Six Pillars provided flexibility to blend tools and methodologies through participatory epistemology (Ramos, 2017). According to Curry and Schulz (2003, p. 58) "combining and layering of different techniques... enrich outcomes". Six Pillars was selected due to it's ability to be adapted to the shorter workshop processes and still bring unique insight if applied through dynamic facilitation styles. The 'Six Pillars' base theory to conducting futures inquiry, referred to as MATDCT comprises of:

- Mapping: mapping the past, present and futures to determine where we've been, where we are and where we are going.

- Anticipation: are there emerging changes or drivers of change on the horizon; issues, problems or opportunities that will, or must interfere with the mapping?
- Timing the future: identifying the overarching patterns of history and challenging our consciousness of change models and possible futures.
- Deepening the future: engaging with the inner dimensions, be that the meanings we ascribe to the world (inner-individual), our behaviour (outer-individual), official/ organisational strategies (outer-collective), or the interior maps of organisations (inner-collective).
- Creating alternatives: using scenarios and questioning to create alternatives or identify different mechanisms to deliver the same state or outcome.
- Transformation: focussing the futures on those paths which lead to preferred images (Inayatullah, 2008, p. 7-8).

Six Pillars has been used in a variety of contexts, including deeper and longer-term processes. The method provides foresight, participatory processes, enables decision making and transformation (Hoffman, 2014; Inayatullah & Elouafi, 2014; Sheraz, 2014). How the theory was applied in the APFN context is outlined in Table 1. One workshop, covered the full scope of the six pillars theory generating insights of organisational scenario, leader, team and adaptation approach consideration. The second workshop dove deeper into examining one scenario of team of the future using Causal Layered Analysis.

Table 1: Six Pillars method and associated workshop activity

Six Pillars Aspect Covered	Workshop Scope
Mapping	• Introductory overview of the authors previous research that outlined the genealogy of AI and the concept of augmentation through technology over the last 5000 years. • Participant definition of AI (exploratory question with responses provided via Delphi withheld preferences technique). • An anticipatory process of applying the futures triangle (Inayatullah, 200 8), using rapid listing, group inquiry and Delphi prioritisation.
Anticipate	• Modified emerging issues analysis (based on 2038 timing) seeking to identify implications of AI futures on organisational adaptation approaches.
Time	• Linked to previous work by the author timing was determined to be cyclical and seasonal nature of AI (Farrow, 2019), including the concept of AI evolution connected to the concept of advantage. • The timing of the future scenario for workshop discussions was then placed in 20 years' time 2038 for both workshop processes due to researched themes around workforce disruption.
Deepen	• Causal Layered Analysis to examine AI and the team of the future in 2038 (Workshop B). 4 0 minutes facilitated discussion covering Litany, System, World View and Myth/Metaphor. •Summary CLA across two chosen organisational scenarios finalised post workshop (Workshop A)
Create Alternatives	• Schwartz (1991) categories scenario analysis combined with the Futures Triangle – rapid list Pull discussion, four plausible scenarios selected – best case, worst case, outlier, most likely plausible scenario selected by participants by Delphi and force ranking processes. • Role Play based on a prioritised scenario from CLA of AI and Team of the Future to deepen the insight.
Transform	• Futures triangle articulated the preferred scenario for the pull of the future – this was then used to examine the implications of AI on organisation adaptation approaches and in particular 'what do leaders of organisations need to think about when considering transforming their organisations towards a 2038 AI future?'

One of the important base aspects of workshop process was to select an approach for scenario generation that could be applied in a short time frame and be broad enough to be actionable by participants quickly. The approach to scenario generation combined Schwartz's (1991) categorisation model of 'best, worst, business as usual and

outlier' with Voros's (2003, p. 16) 'Generic Process Framework for Foresight' that outlines 'five classes of alternative futures (potential, possible, plausible, probable and preferable)'. Schwartz (1991) model was selected for this workshop, as it was analysed against the restrictions of timing of the workshop, the estimated attributes of participants, the link to commonly known change strategy and business case creation language (Change Management Institute, 2013) and previous references within the Six Pillars methodology (Inayatullah, 2008). Other foresight approaches would also have suited this process, in particular Voros's (2003) Generic Process Framework for Foresight and Miller's (2007) Hybrid Scenario Method. Voros's (2003) Framework has been tested in organisational contexts, particularly relevant in areas where longer term strategy was being determined beyond the mainstream three to five years. That was not the focus of the APFN workshops, which were organisational agnostic and were not creating a definitive deployable strategy.

The primary aspect of any anticipatory action learning approach is participation and trust (Inayatullah, 2006). The Congress context had created a collegiate, collaborative and trusting learning environment, so participation rates were a high quality and of a more optimistic nature than what may be found in larger response group or the broader literature. The data gathering processes was framed as a 'Six Pillars Sandpit' that as a secondary outcome provided participants with a rich learning experience to build foresight literacy (in line with APFN congress objectives).

Generated Themes and Insights

Anticipatory processes honour the participants contribution, thus the vast majority of data presented is from the participants own voice. This article will now outline five primary themes and related insights generated from the workshop data collected. These themes are:

1 - Definitions of Artificial Intelligence are connected to data, fictional genre and will one day be ubiquitous.
2 - Scenarios for organisational futures in 2038 reflect augmentation where 'AI has the jobs that humans do not want to do'.
3 - Teams of the future embrace new definitions of diversity (many languages) and collegiality (one team).
4 - Leaders of the future are prepare d to learn and to shift power and place.
5 - Organisational adaptation approach is environment and ecology impacted, guided and experimental.

This paper will now outline each theme created as a result of analysing data generated through the two APFN workshop processes.

Theme 1 – Definitions of Artificial Intelligence are connected t o data, fictional genre and will be one day ubiquitous.

The vast majority of participants had not been closely exposed to AI in an organisational setting. Participants were asked to confidentially define AI from their own personal experience, before agreeing on a collective definition. Participant responses collected (un-edited) on how they personally defined AI included:

- AI can do lots of data analysis in a short time that human can't do.
- AI has no emotion like the Terminator.
- AI is about a smart algorithm that can learn from us and adapt to the environment without humans help.
- Robots/computers programmed for efficiency and replacement of humans.
- AI is massive collection of data analysis - mapping the logic and producing the solution.
- AI is technology that makes the human brain lazy.
- Data learning analysis and efficiency.
- Robots with digital brain.
- Both brain helper and brain killer.
- Data analysis.
- Not reliably smart like in Star Wars and Iron Man's Jarvis.

The responses were then prioritised to generate a base definition to provide a frame for deeper exploratory approaches. The workshop participant's agreed definition of AI, after discussion fictional AI characters for a while, got more serious. AI was defined as 'a collection of different programming technologies, languages and algorithms that can learn and adapt autonomously'.

Defining what AI is, even in this smaller participant set, brought a diversity of opinion. Previous studies have demonstrated the influence on individual understanding of AI from myth and metaphor (Campbell-Kelly & Garcia-Swartz, 2015; Farrow, 2019; Yang, 2006). This legacy from artistic, spiritual and populist science-fiction media, has unconsciously influenced the narrative and beliefs of people about what AI is. This also correlated with the participants responses provided in workshop process. Building on the myths and legends and the increase in print media formalisation throughout the 19th and 20th century, terminology linked to what we know as AI today, was created. The term computer was from the 1600's linked to a person who did calculations, before being referenced to a machine in the 1800s (Wikipedia, 2018a). Terms and concepts from the science fiction genre also included Android in 1891 and Robot in 1921 (Farrow, 2019; Wikipedia, 2018a). Science fiction writers and film makers also outlined how life and intelligence could be artificially created. I n 1818 Mary Shelley's suggested this possibility within her novel Frankenstein (Wikipedia, 2018a). The 1920s cinema medium brought visual reference to mechanical humanoid s that double as a human who are enemies to society, such as in Metropolis in 1927 (Wikipedia, 2018b).

It is likely that this link to science fiction in terms of the narrative around AI will also affect leader and team member perceptions of AI which would be a useful future study area. Ramos (2003, p. 6) who states that "science fiction may have laid a foundation for foresight and inculcated the openness of the many alternative futures humans can choose, with subsequent transcendent visions". Most commonly discussed AI referred to by participants also was about augmentation of humans rather than replacement. AI was seen to enhance human efficiency through analysing vast stores of data impractical for human analysts. Most participants were able to articulate that in reality AI needs data and a lot of it as a base ingredient to learn and adapt to the environment. A number of participants stated that without data 'feeding the algorithm' AI is not possible and provided a few in country anecdotes of governments limiting or control ling what data is collected from it's citizenship, and what it's use was. Through both workshop processes, people used the terms AI and Robot interchangeably. As discussions progressed, workshop participants suggested that by 2038 AI as a term referenced in our organisational dialogue, would become ubiquitous. Weiser (1991, p. 95) states "the most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it".

Theme 2 – Scenarios for organisational futures in 2038 reflect augmentation where 'AI has the jobs that humans do not want to do'.

The first step of Six Pillars of futures studies is to build a shared history (understanding the past, present and future). A historical genealogy of world views was used as a key tool for this process, building on previous research by the author where AI was unpacked over the past 5000 years (Farrow, 2019). Simon and Newell (1958, p. 9) suggested in the 1950s that the "energy revolution of the eighteenth and nineteenth centuries forced man (sic) to reconsider his (sic) role in a world in which his (sic) physical power and speed were outstripped by the power and speed of machines". Thus, scenarios of machines taking the role of humans in work contexts is not a new one. Smarter machines today mean more industries can offset human workforces with AI and bring wider systematic and societal impact s (Frey & Osbourne, 2013; Parnas, 2018).

Using a six pillars approach in a workshop setting is about creating alternatives (Inayatullah, 2008). The participants created a number of possible scenarios through the application of a combined Schwartz (1991) scenario analysis overlaid onto a futures triangle. The futures triangle (Inayatullah, 2008, p. 7-8) provide d three dimensions that participants used to identify trends or images that are pulling us to the future and then examine the interaction between the weight of history that is resisting this move and the forces that are pushing us to the present of the preferred scenario. The primary question asked of participants for PULL was 'What are the present contesting images of the future that are pulling organisations to consider an Artificial Intelligence future?'. The group then discussed which scenario sub-segment (best case, worst case, business as usual or outliers) they

believed collectively the scenario belonged (see Table 2).

Table 2: Creating alternative futures by mapping contesting images (pulls) of the future against Schwartz (1991) scenarios

Best Case	Worst Case	Outlier	Business as Usual
• **# AI has the jobs humans don't want to do.** • AI influence products priority. • AI helps set strategy • Optimise resource management. • Jobs become more interesting for humans.	• Robot revolution. • Humans jealous of the attention AI gets • Human extinction – no human organisations • Industry sectors. become illegitimate • Organisations trim head count by 50%.	• Negativity driven by ethics void. • Human lack capability to accept AI. • Segregated organisation (pro AI or against AI) • New ethnicity - human/AI hybrid. • War between organisations – I'll hack you.	• We cannot stand still. • Monkey see, monkey do • To do or not to do (cost versus benefit).

The dominant discourse and current mainstream literature focus on human's still having a major role in organisations in 2038, with AI replacing humans where relevant and efficient economically to do so ((Brown, 2007; Brynjolfsson & McAfee, 2018; Gouping, Yun, & Wu, 2017). Participant views matched current literature with the vast majority of scenarios identified for 2038 being less about full human replacement, and more about the consequences of humans working closely with AI. The process used a Delphi voting process to limit potential bias by having revealed anonymous preferences to determine what they believed to be the priority preferred scenario. This was then used as the PULL in the futures triangle process (see Fig.1). The participants agreed preferred scenario was 'AI have the jobs humans don't want by 2038'.

The insights from these workshop processes and the scenarios are also industry, AI sub-discipline and geographically agnostic, which also differs from research that may look at specific industry segments, replaced job types or specific technology adaptation area such as Human and Robotic Interaction (Jarrahi, 2018; King & Grudin, 2016; Mehta & Dvarakonda, 2018).

The PUSH analysis in Fig. 1 suggested that AI having the jobs that humans do not want to do, would be reinforced through socio, economic drivers in some countries due to birth rate deductions and tighter border control restricting the free flow of workers between countries. Some generational differences were also identified with younger generations being perceived by participants in the workshops to have a different work ethic and value-set than many of their older peers. Suggestions made that this was because younger people were already 'reliant on machines', in how they connect, communicate, work (freelance and contracting revolution) and exchange value (start up and entrepreneurial business). The other strong theme in the PUSH discussion was linked to more market driven concepts around economic prosperity as long as AI was seen to add value to bottom line budgets and adding to Gross Domestic Profit (GDP).

The WEIGHTS in Fig.1 showed that the deeper patterns and barriers preventing organisations enacting the preferred scenario. In many adaptation situations in organisations it is the complexity in the ecology of the organisation combined with reluctance or resistance of staff and leaders to change, that holds back the vision achievement. Workshop participants identified that the social values and agreed organisational norms around the concept of work for pay, a basis in capitalist theory, would be one of the main weights holding back adaptation. This deeply entrenched global system, combined with the fact that technology is not accessible to all currently, nor neutral in bias, will make it challenging for the transformation required to reach the preferred scenario. The group suggested that global competitiveness within markets that organisations operate may prevent the choice made within the preferred scenario. The statement '... humans don't want to do' suggests a degree of agency in the concept of choice. Within the future scenario, who decides which jobs humans don't want to do is silent, which in itself implies some work would be required to test this scenario in particular through the '6th pillar' of transformation (Inayatullah, 2008).

PULL PREFERRED SCENARIO – AI have the jobs humans don't want by 2038

PUSH – 'What are the quantitative trends/critical drivers that are creating or reinforcing organisations to consider the preferred scenario?' Global population by 2050 anticipated to be 30% Africa and 30% in SE Asia; New generation have a different work ethic to older generations; New attitudes and values; Aging workforces and declining birth rates in a number of countries; Economic uncertainty affecting traditional markets; AI value add – GDP value add; New education – literacy levels up across the world; People will be more driven by skills they carry (young people); They will trade skills with others; We are driven by machines already (e.g. smart phones, people looking at their phones and not talking to each other); Survivability of humans due to climate issues and war.

WEIGHTS – 'What are the deeper patterns/barriers/weights from history that are preventing organisations to consider the preferred scenario?' Need to earn an income; need taxes to fund new investment; Investment made in machine/system and not people's capability to use AI; Humans are machine dependent today – with Google, humans may stop thinking; Social values in particular cultures – majority culturally different (shifting); Regulation by Government forcing organisational compliance in traditional modes of operation; Union and worker rights in some countries blocking AI use; Individualistic mind set holding us back; Greed by large corporations - global competitiveness; AI causing social gaps – generational and discriminatory (social angle).
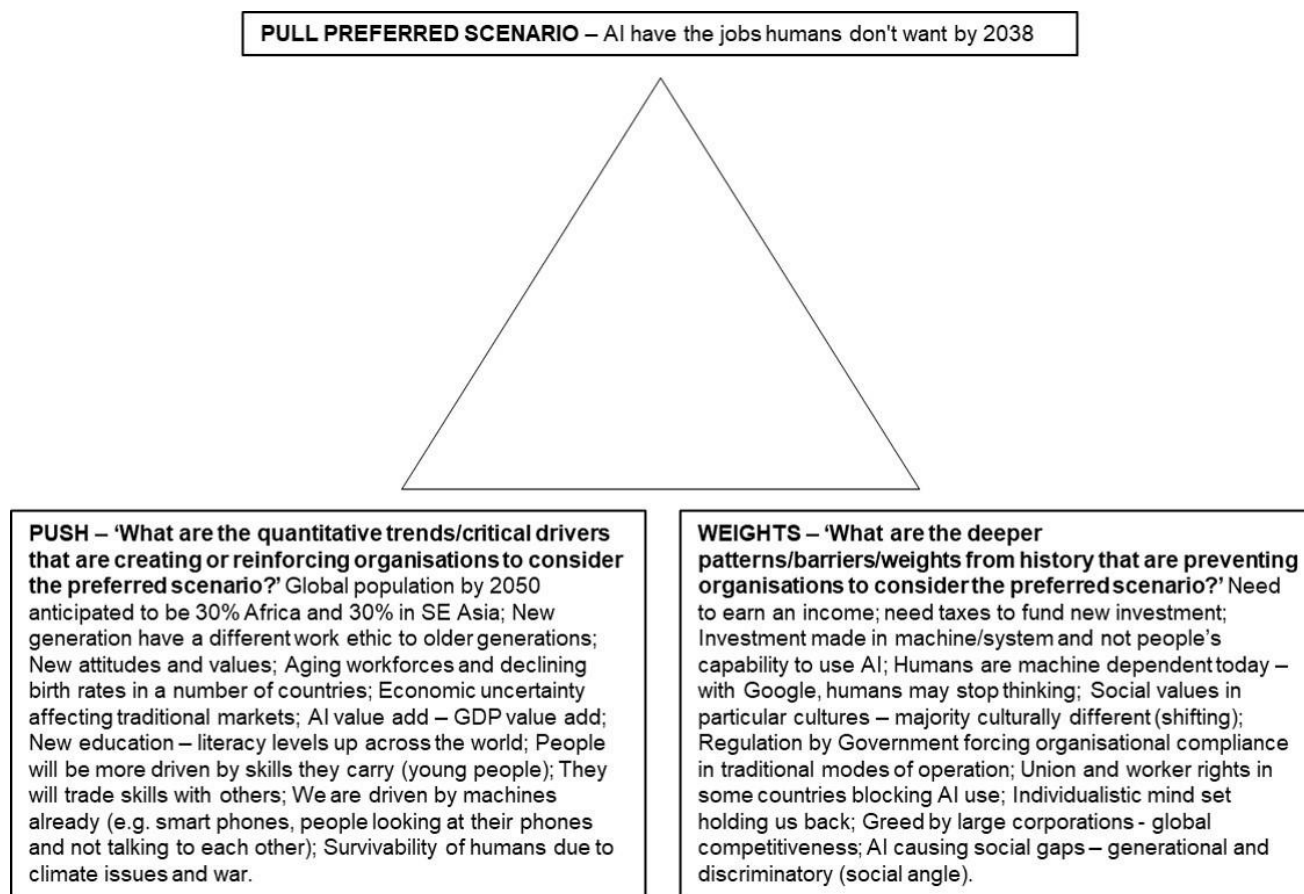
Fig. 1: Futures Triangle based on preferred scenario

Theme 3 – Teams of the future embrace new definitions of diversity (many languages) and collegiality (one team).

In Workshop 2, the Causal Layered Analysis (CLA) methodology was used to deeply dive into the 'team of the future'. Teams and team work is one of the primary components of any organisation al structure and will also be challenged when the human role in the team is augmented or replaced by AI. Wildman and Inayatullah (1996, p. 734) suggest that 'Causal Layered Analysis attempts to explore the different levels of an issue or problem bringing the many discourses that create the real'. CLA is considered an important part of the six pillars approach aiming to deepen the future. The method is adaptable for workshop settings and examines layers of litany, systemic causes, world view and the deeper unconscious level of an issue (Inayatullah, 2008). Each participant had team-based experience so could come to the discussion with personal perspectives. The primary question for this CLA workshop was exploring what were the adaptational implications for teams of the future (2038). The CLA started with a wide rapid listing investigation, limited only by the suggestion that teams of the future would involve both human and AI working together, over 40 data points were identified (Table 3).

It was curious to the researcher that there was not a strong divergence in views between older and younger workshop participants. This was possibly due to the educational background and interest in potential and plausible futures rather than 'used futures'. Older participants who had experience in leadership roles, wanted workplaces of the future to be 'full of opportunity' for their children or grandchildren. They observed that some of the younger generation had a different concept of work due to living with less scarcity, greater technology exposure and more abundance.

Table 3: Wide Causal Layered Analysis Team of the Future Human and AI 2038

CLA Layer	Workshop Findings
Litany	AI working with AI (pure AI); Work is important – but human is not central to it; Hackers hack soccer; AI definition different (won't be there in the future); AI won't be mentioned as it is just part of things (BAU); AI singularity reached; AI given human names (Athena, Siri, Watson, Sophia etc.); Robot does surgery; People long for used future (back to the future); Robot board assistant and advisor; Speed of communication is instant – action fast ultimate efficiency; 5th /6th dimension superhuman; Jarvis is real; No longer the battle between human and AI; Human more spiritual and relaxed; Robot decision makers.
System	Computer language becomes the new global language, first non-human language; Policy AI (AI given agency and rights); Human or AI Leader (depends on context); Team description – human versus robot role (RACI); Robot inside us/alongside us; Government regulation; Team different purpose and role for human not central; Robot tax pays; Universal basic income; One cloud provider (new world provider); Binary language versus human language (new language new culture); Human language too complicated to be efficient for machines; Increase networks and freelancing.
Worldview	I care for my AI colleague; Job definition change; Translators of many languages; Human released to do other work; AI and human equal value in a team; Human becomes AI support system; AI ubiquitous; AI can act as the facilitator/leader; Collaboration AI and Human (one team).
Myth/Metaphor	We will become the laptop (metaphor); Everyone will be unemployed (myth); AI run amok (myth); AI lose control (myth); AI takes over teams (myth); We are the stay at home parent (metaphor); AI is my friend – BRFF – best robot friend forever (metaphor); Companionship AI and Humans (Shintoism); AI boss or chief advisor; Humans are insignificant or fully significant (myth).

The results of the wider CLA were then deepened (Table 4) through prioritisation and role play to agree the plausible scenario for team of the future. This scenario was described as 'm any languages one team – 'Best Robot Friend Forever' (BRFF)'. Childlike and more positive and optimistic linked to endearing film characters including WallE, Big Hero 6 and Astro Boy (Wikipedia, 2018a). In 2038, young children of today will be the team members or leaders in the organisations of the future. The role play shifted participants to allow time for deeper meaning (inner and outer individual) and integrated the four levels of the CLA map (Inayatullah, 2008). According to (Rhisiart, Miller, & Brooks, 2015, p. 126) 'in novelty rich environments strategic improvisation is the only way to actually engage the capacities of the organization with the potential of the emergent present'. In this role play two participants acted as humans relaxing, and a team of other participants beeping, counting, buzzing, communicating telepathically, 'working' and understanding each other in their 'binary' language. One of the 'AI actors' was responsible for transferring messages to the humans (in human verbal language in this case English) with a reminder that work was on track and it was time for the human to 'deepen relaxation and higher thinking'. It is interesting that the group focussed still on one AI (leader) essentially acting as the primary interface with the humans. That person having both binary and human language capacities.

Novelty such as play and improvision, also inspires curiosity. Children in developed countries have interacted with robotic toys, and more recently chat bots and personal assistants such as SIRI, Alexa and Google Home. They have been educated in, and through, forms of AI, and may even rely on the technology to assist with their study and socialisation. Active STEM (science, technology, engineering and mathematics) curricula has over the last 30 years been building the future teams of the future (Hallinen, 2017). Forms of in-pocket AI have billions of users globally and billions of sources of data to harvest (Li, Hou, & Wu, 2017; Statistica, 2018). By 2038 the children of today will be the team members of the future and grown up in some cases with AI exposure. Thus, it is likely that working with an AI 'colleague' will seem less trivial and more tangible, trusted and realistic. It was suggested by some participants that by 2038, AI would be ubiquitous and not specifically referenced as part of the dialogue, it would be enmeshed within an organisations ecology.

Table 4: Summary CLA team of the 2038 future scenario

Scenario	Many Languages One Team (Best Robot Friend Forever)
Litany	• Human and AI together provide the solution or service.
	• Work is important but human not central to it.
System	• 'What is work' and 'what is an employee' definition changed and regulated.
	• Human language too complicated to be efficient for machines – binary over human language type –
	• translators are required.
World	• AI is ubiquitous
View	• AI is my friend not my enemy (best robot friend forever).
	• Relax you are Human
Myth/	• In built translator.
Metaphor	• Market Garden

The observations made by participants of AI having a binary language brought up the suggestion that teams of the future would have a broadened definition of diversity and collegiality. Typically, diversity in a work context covers age, gender, ethnicity, sexual orientation, disability/abilities, personality, spiritual and cultural dimensions . Adding technological diversity or 'embracing the non-human or machine colleague' brings a number of possible ethical, moral and psycho-social ramifications that would be an interesting topic for another paper. What would I feel if my AI colleague who I had relied on for my personal sense of achievement was terminated or replaced by another model? In the scenario identified, the future team dynamic was not human over AI in a master servant relationship, but instead the primary emphasis from both workshops was around collegiality, cooperation and collaboration where either AI or Human could be leader or team colleague or tool ('we become the laptop'). Therefore, you could argue, some amongst us may feel a sense of loss if our AI colleague changed or was gone after building new work processes and norms. There are many existing examples of inclusive teams that are not 100% human (as in the case of emergency or defence service personnel and their animal teammates) where clarity on role, feedback, reward and trust are critical aspects to a successful working relationship (Reid, 2009). When relationships change, reforming processes will need to take place as in the case of a human team member leaving a team there is a hole that needs to be worked around or filled.

Theme 4 - Leaders of the future are prepared to learn and shift power and place

Part of the majority of teams and organisations is the concept of leader. Leader doesn't necessarily mean hierarchy or power; it can also mean servant, guide or facilitator (Change Management Institute, 2013). There is a growing observable trend in active leadership and participatory design approaches where team members rather than leaders are idea generators and solution partners. Leaders were described by APFN participants to be central to adapting the organisation's ecology to embrace the new diverse 'team' who deliver the work.

Participants were asked "What do leaders of organisations need to consider when adapting organisations towards a 2038 AI future?". Participants responses were analysed to develop six key leadership principles that leaders could consider when managing the adaptation of AI in their organisational settings (see Fig.2).

The principles suggest that firstly leaders need to be open to learning in all its form (through the wins and perceived losses). Given the leader has traditionally set the direction and work priorities, the leaders of 2038 will need to understand the diversity AI brings and the layered implications to the ecology of the organisation (consistency across litany, system, world view, and metaphor). Leaders will also need to challenge historical power and control dimensions, redefining their role and be ready to have AI influence or set strategy. It is likely that for some without agreeing the purpose and contribution AI could bring to an organisation, level of resistance may be higher initially. By 2038, APFN participants felt that there would be a precedent of early adopters who will embrace new forms of leadership, and if the experience perceived as value adding, the later adopters would be likely shift to the new ways of working (Rogers, 1962). It was observed that working with AI in an advisor
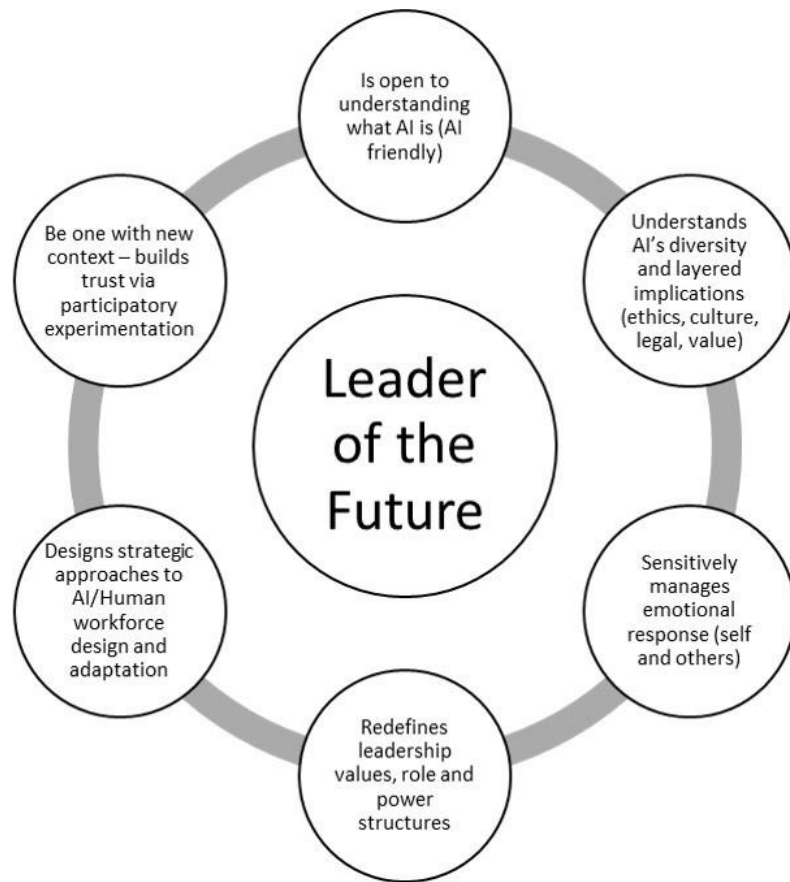
Fig. 2: Leader Principles for AI futures

or assurance process could be threatening for some leaders who have had their ego and sense of self defined by the 'leadership title'.

The leader role will be adapted in the organisational contexts where the boundaries around legislative or fidu-ciary decision-making processes will (in the short term) still need to be adhered to. Participants felt that AI as an advisory or assurance service provided to augment leader decision making, would be a standard corporate governance best practice by 2038. Leaders in the future may also be AI. Based on the analysis of data, an AI or Human may take the accountability. providing guidance to an AI team or a AI/Human blended team. Leaders will be critical to shift traditional models to disbursed models, smaller agile teams of AI and human teams. Research such as Makridakis (2017, p. 56) support the views of participants and states that 'The successful firms during the AI revolution will 'focus on' evaluating and exploiting AI technologies to gain the most out of their implementation in all aspects of the firm'.

Workshop insight supported literature including the Change Management Body of Knowledge (Change Man-agement Institute, 2013) that leaders are expected to be the facilitators and the accelerators of organisational culture (Kotter, 1996). Alongside methods of organisational adaptation, workshop participants also illuminated that societal goal posts, country and religious based world views and certainties that were anchors for people, organisations and communities will adapt as a result of AI. In the past we would go to the doctor or priest, now we would go to Google first. Rhemann (2017, p. 26) states 'few industries or consumers seem to have time for an introspective moment, but instead are too busy trying to outrun the massive business impacts of advanced automation   that   are   creating   more   intimate   connections   with   the   consumer'.

Theme 5 - *Organisational adaptation approach is environment and ecology impacted, guided and experimental*

The final pillar of the Six Pillars approach focusses on 'transformation' and the paths that lead to the preferred future (Inayatullah, 2008). Thus, the last theme identified relates to the adaptation approach that organisations could consider to reach the preferred future. With the prolific reporting of AI developments daily through accessible blogs and articles, organisations are considering what AI means for their future viability, as well as for their future opportunities. Currently, organisational adaptation approaches to general technology fall into three broad categories; the first being incremental and co-designed learning approaches, the second process linked to variables that trigger cause and effect, and the third being more tradition build and implementing change (Worley & Mohrman, 2014). Like many contemporary technology implementations, AI development and take up has been much slower than originally thought from when the field of research was formalised in the 1950s (Campbell-Kelly & Garcia-Swartz, 2015; Reasoning World, 2017).

As previously stated, the concept of a human being central to labour was challenged when the first mechanised machines were introduced into production and warfare (Farrow, 2019). The assumption provided to APFN participants was that AI may require a different adaptation approach compared to other forms of technology. To test this assumption, participants were asked an open question of what they thought the organisational adaptation process implications would be when moving to the preferred AI organisational future? Participant response was analysed post workshop into three zones that can influence longer term organisational adaptation strategies and plans (see Fig.3).
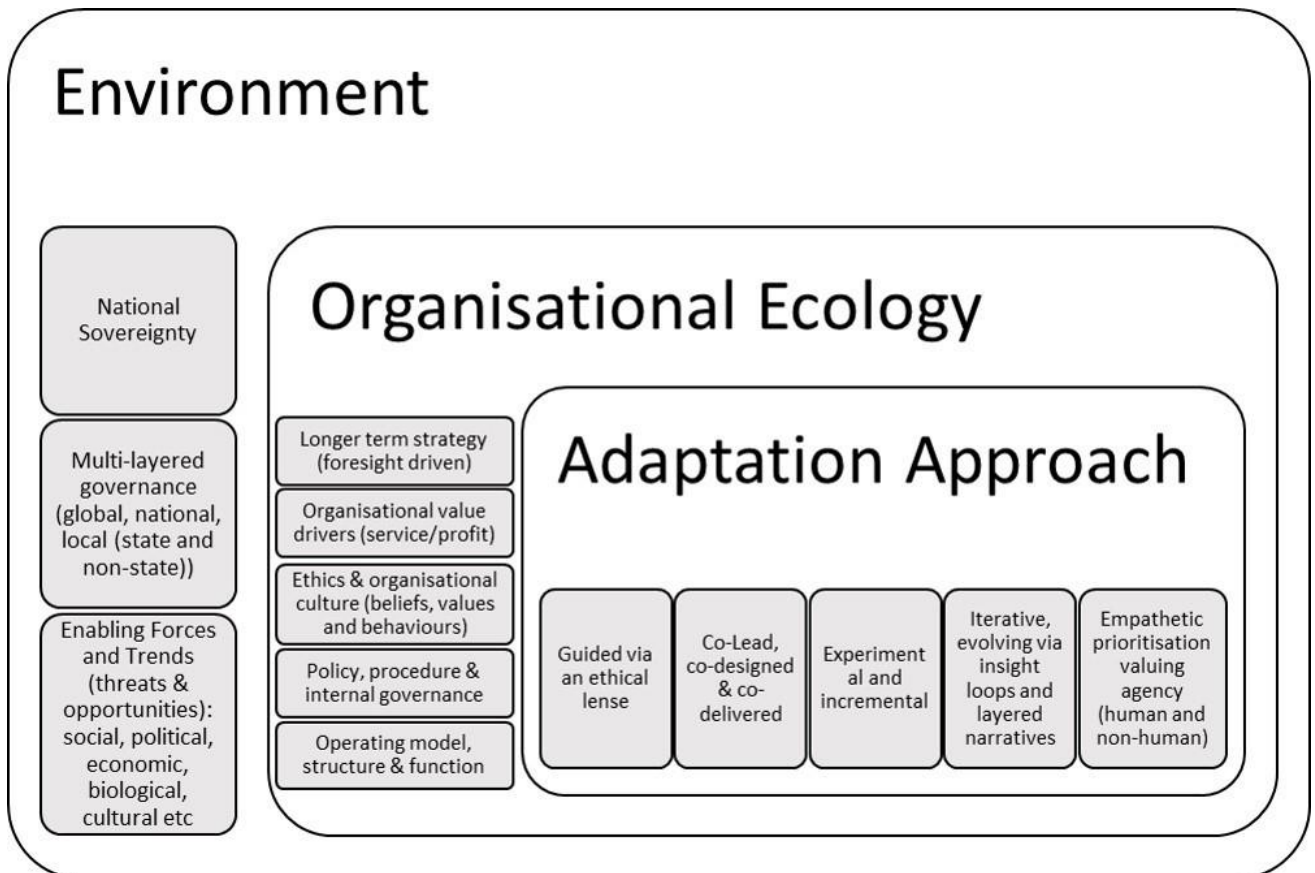

Fig. 3: Environment, Ecology and Adaptation Approach considerations for AI in Organisational Contexts

According to participants at AFPN, the global environment and interplay between global forces will set the context for the adaptation approach utilised with in organisations. Starting with national sovereignty, nations currently have a 'choice' on what they allow to occur within their borders. Global organisations and accessible technology platforms (cloud based) have challenged national borders, models of economy and concepts of national sovereignty. Today there are multi-layered governance structures, both state and non-state that are challenging original boundaries and control frameworks of organisational. According to some participants experience, not all countries have agreed to a global or even national standard of why, when and how AI will be utilised in the organisation of the future. Most organisations are currently making these choices based on their own internal needs and strategic wants. It is likely by 2038, that global social, political, economic, environmental /biological and cultural forces and trends will influence the environments in which AI will be prioritised to be utilised. In some cases if there are major impacts on energy supply, the human may have to revert back fulfilling worker roles, long since replaced by energy hungry technology solutions.

AI needs data to function correctly. Currently the underlying data supply is not valued or collected consistently across nations. AI use in some national contexts would not be possible unless access to reliable forms of technology, information collection and use protocols changed. Some participants at APFN stated that AI increased the risk to citizens due to government or organisational misuse. In some examples provided by participants, data was either provided or taken without consent, and seen as dangerous for citizens and could lead to persecution. Participants suggested that in the absence of a perceived agreed governance frame globally or nationally, that an organisational position or policy was required to guide decisions around adaptation approach as well as the scope of augmentation or replacement of human and AI. Participants noted that often due to economic, social or cultural evolutions that the organisational level often self-governed in this space to fill the regulatory void but still yield benefits to their shareholders or target stakeholders.

The second layer of organisational ecology was described as the systems, operating models, processes, values and culture that make up a typical organisation. The adaptation approach was perceived to not only affect job roles, but the whole ecology of an organisation. The existing organisational ecology, and its ability to absorb the 'adaptation volume', would have an impact on the strategy or incremental deployed approach taken. In newer organisations this capacity could be part of the operating model selected. For organisations that have a longer legacy with entrenched cultural norms and processes, p lacing AI adaptation in a longer term foresight driven strategic perspective was suggested by some participants to be the more optimal approach. This would enable leaders to co-lead, co-design and co-deliver a sustainable adaptation pathway (for both staff and customers). Changes particularly at the world view embedded in governance, policy and procedural layers (due to regulatory contexts in some countries) would need to be adapted first to free up space and possibilities for new worldviews that will allow the ability to see positive futures. Dynamic application of Anticipatory Action Learning theories such as Six Pillars and the Futures Action Model (FAM) to iterate the first round of scenarios and implications for adaptation and then test and further layer insight through other more individualised exploration processes (Inayatullah, 2008; Ramos, 2017).

The third layer explored the adaptation approach. This was described by participants to be more principle and behaviour oriented in nature, rather than a formal process. This aligns with the more organic references around AI being friend rather than foe, and the preferred scenario of AI being used in roles that that humans do not want to do. Participants in their feedback, suggested a guided and insight driven approach to adaptation, rather than inflexible process-oriented adaptation methods. Worley and Mohrman (2014, p. 215) suggest that traditionally there were two chapters of organisational adaptation and change models 'change process theories, describing the variables that trigger, affect or cause the change and the second type focuses on changing and the implementation of change'. Often these traditional change models were linked to the world view of workers being assets or 'cogs in the machine', so could be influenced with the right incentives (survival or learning anxiety) (Change Management Institute, 2013). The approach today, predominantly in the field of technology implementation and cultural change, is one more around incrementalism, agility, continuous improvement and learning (Al-Haddad & Kotnour, 2015; Change Management Institute, 2013; Worley & Mohrman, 2014). It is likely from the

perspective of participants, and the data surrounding information technology deployment preferences, this trend for agile adaptation approaches will continue. From the researcher's perspective the adaptation approach also needs to be expanded to consider how the multi-governed, multi-layered approaches and deeply trans-contextual considerations of Fig. 3 will be incorporated. In participant the introduction of a broader definition of empathy of both the human (individual, family and collective) and non-human agency (plants, animals, biosphere and even the AI itself).

Conclusion

Brynjolfsson and McAfee (2018) suggested that AI will "… drive changes at three levels: tasks and occupations, business processes and business models often complementing human functions rather than completely replacing them in service industries". AI will adapt the way we work and therefore the adaptation approach will also need to be carefully approached and guided by a foresight driven and insight generating approach. Organisations will need to consider what longer term plausible scenarios exist around AI and its use in their context and ecology. Part of this consideration would be to examine the influence of history and create alternative scenarios for change. Then deepen the engagement looking and inner and outer perspectives of the individual as well as the collective and then transform on those paths that create a preferred future (Inayatullah, 2008). This is where anticipatory action learning approaches such as Six Pillars can be an adaptation process in itself as it has room for participants to reach a deeper level and explore foundational concepts of the meaning of a human, the meaning of work, and the human's place in it.

This article has outlined five primary themes and insights analysed from data collected at two workshops at the APFN congress. The themes can assist organisations, make a choice on level of AI and build their adaptation strategies with a long-term futures lens. It is clear that the environment and localised geo-political environments are currently affecting data collection and use. Those countries that embrace technology and have good ethically based collaboration between corporates and governance, provide the environment for organisation ecologies to respond positively within. In environments where this multi-layered governance is not in place, there is the likelihood of greater divides between human and non-human and organisations with AI and organisations without AI. A human agency centred design approach may be required to bridge this divide.

Adaptation starts with the individual and each will have their own unique level and speed of acceptance of innovation (Rogers, 1962). Leaders typically need to adapt first and focus building their social, emotional and cultural intelligence to support the adaptation efforts. Leaders will need to make considered decisions around the application of AI within their organisational contexts, including what the non-monetary costs and benefits to adaptation are. They may need to embrace a broader definition of diversity that includes the non-human. Collaboration between futurists, government and organisational leaders and AI developers will also be central to supporting the creation of the ethical framework that will provide guidance in adaptation and disruption. It can be concluded that joined up approaches, following the same incremental collaborative design principles, is one way that organisational futures will still keep the human agency at the centre.

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