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PRELIMINARY FRAMEWORKS AND MODELS FOR TELEWORK MATURITY WITHIN ORGANISATIONS

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ABSTRACT

This paper is a preliminary step to assess the feasibility of telework for any given organisation. We posit two qualitative frames of telework to define the additional, digital referential platforms that exist with regard to work today: abstraction and conceptualisation. To communicate research within this field we utilise a language taxonomy derived out of a review of the relevant literature. Furthermore, we propose a transformer model to serve as a means to i) interpret quantitative aspects of telework such as metrics and KPIs and ii) inform stakeholder decisions with regard to appropriate telework configurations for their respective company.

Keywords telework, qualitative frameworks of telework, themes and taxonomy of telework, transformer model

1   QUALITATIVE FRAMEWORKS

INTRODUCTION

Communication of a digital form and transmission by electronic means that is, through an artificial, non-natural medium, would create a sense of distance to the parties involved in the exchange. Seeing people by television and hearing others by telephone are prime examples. This type of exchange is fundamentally and characteristically indirect in terms of information travel between source and destination which would move between natural and artificial mediums rather than through the former alone. However, a counter reality would exist namely that, this type of communication is near-instantaneous, irrespective of the geographical location of the source or destination and this would diminish the sense of distance and create a link between participants that would appear to be near and direct in terms of experience and thus, close. Telework in terms of language would mean work at a distance. Discussion of this particular two-part concept in terms of definition is not uncommon (*see* McCloskey and Igbaria, 1998. *Cited In:* Bailey and Kurland, 2002, p.385; and Wilson and Greenhill, 2004, pp.208-9). Compared to telephone and television in terms of operation, telework would take communication to a new level of practice and exchange: at full capability telework would capture sight, sound, sense of place, space and time for each person to the exchange, akin to a viable and feasible framework of interaction; characteristically not dissimilar in many regards to physical, face-to-face interaction. Technological transformation for work as per the above would uproot traditional physical frameworks as the sole referential platforms. Inertial frameworks or definitions are an essential means to advance further per se. We posit frameworks for telework to establish the additional, digital referential platforms that would exist today. Furthermore, definition frameworks of telework posited by research studies vary to such an extent that there is no standard unit of measurement or consensus (Pérez et al., 2002, p.276; Sullivan, 2003. *Cited In:* Hislop, and Axtell, 2007, p.36). We have sought to define telework out of each founding aspect that would exist; independent formations, as opposed to one definition framework out of multiple aspects; a definition that would risk complexity and thus, trade off with i) clarification and simplification, ii) a viable unit of measure and iii) standardisation. This paper therefore provides clarification (conceptual frame) and simplification (abstraction frame) of teleworking and related definitions, proposes a system based on metrics and KPIs (assessment tools) to measure the impact of teleworking and proposes models and approaches which standardise existing but varied practice.

CONCEPTUAL FRAME

A concept would form out of each context that would exist and different contexts would lead to different conceptualisations. We have drawn upon the concept that is, telework, as a qualifying definition in the earlier section. We now consider alternatives namely (*in alphabetical order*): **‘call centres’** (Perez et al., 2004, p.656)*,* **‘car-based working’** (Middleton and Cukier, 2006. *Cited In:*

Hislop and Axtell, 2009, p.68), **'computer-aided home-based work'** (Mirchandani, 2000. *Cited In:* Tietze et al., 2009, table I, p.597), **'distance office'** (UK Parliament, 1995, p.1), **'distance work'** (Di Martino and Wirth, 1990. *Cited In:* Teo and Lim, 1998, p.253), **'electronic cottage'** (Chapman et al., 1995. *Cited In:* Teo and Lim, 1998, p.253; Toffler, 1980, pp.204–17. *Cited In:* Musson and Tietze, 2004, p.255), **'e-work'** (Flexibility, 20??), **'flexiplace'** (Goodrich, 1990. *Cited In:* Teo and Lim, 1998, p.253), **'home-based teleworking', 'homeworking' and 'working at home'** (Bryant, 2000. *Cited In:* Tietze et al., 2009, table I, p.597; Di Martino and Wirth, 1990. *Cited In:* Teo and Lim, 1998, p.253; Jackson, 1999. *Cited In:* Tietze and Musson, 2003, p.441; Tietze et al., 2002, p.386; Pérez et al., 2002, p.276), **'hybrid workers'** (Halford, 2005. *Cited In:* Hislop, and Axtell, 2007, p.39), **'IT-supported working from home'** (Halford, 2006. *Cited In:* Tietze et al., 2009, table I, p.597), **'mobile teleworking'** (Axtell et al., 2008, p.902), **'mobile work'** (Hislop and Axtell, 2009, p.62), **'multi-location working'** (Hislop and Axtell, 2009, p.62), **'neighbourhood work centres'** (Tietze et al., 2002, p.386), **'nomadic'** (Felstead et al., 2005, p.136. *Cited In:* Hislop, and Axtell, 2007, p.43; UK Parliament, 1995, p.1), **'remote office work'** (Salomon and Salomon, 1984. *Cited In:* Teo and Lim, 1998, p.253), **'remote working'** (Pérez et al., 2002, p.276), **'satellite centres'** (Jackson, 1999. *Cited In:* Tietze and Musson, 2003, p.441; Pérez et al., 2002, p.276), **'telecenters'** and **'teleworking centers'** (Pérez et al., 2005, p.96), **'telecommuting'** (Holloway, 2007. *Cited In:* Tietze et al., 2009, table I, p.597), **'telecottages'** (UK Parliament, 1995, p.1), **'teleservice centres'** (UK Parliament, 1995, p.1), and **'virtual work'** (Schwarz et al., 1999. *Cited In:* Tietze et al., 2009, p.587). To conclude, we find '*telework*', would qualify most as an encapsulation of this new work form and a viable definition framework in terms of a) an overarching and conceptualised definition and; b) the lowest common denominator form that is consistent to the twenty-eight conceptualisations as listed above. Furthermore, telework would be a standardised concept and generalisable unit of language, out of which, an understanding in terms of abstraction can be put forward to define the area of investigation.

ABSTRACTION FRAME

To summarise a telework definition in terms of an inertial frame that is, abstract, we consider three factors in combination. Firstly, the term '*tele*' in the two-part concept can be substituted with the concept '*ICT*' or Information Communications Technology to form a new concept named, 'ICT-work'. Secondly, 'ICT-work' in this regard would need to extend further, that is, to capture the capability and meanings of the work form to modern day organisations and human resource: telework is the capability to work, that is output, operate and/or interact with others work at relatively higher standards of continuity that is, at any time as per asynchronous communication. Thirdly, teleworkers have the capability to work at any place most notably, at a distance from the designated or traditional, office place and space and at a minimum, akin to, or consistent with organisational standards of non-ICT process, product and/or output. To conclude an abstract framework:

'Telework is a four-part framework: i) work that is, process, product and/or output of a digital form; ii) created out of digital environments of space, place and time and; iii) with resources that is, paper, writing, audio and video applications of a digital form and iv) to a level of significance, equal to, an enhancement of or an improvement to the pre-transformative state of that work.'

Telework thus, is a transformative work practice and alternative and/or complementary to job function(s). Examples of process and output transformations include: writing to typing, paper reports to digital documents, filing cabinets to databases and human interaction within the physical framework to online interactions within digital frameworks such as emails, forums, bulletin boards, VoIP (Voice over Internet Protocol) and streaming video.

2 TOOLS FOR ASSESSMENT

METRICS

Qualitative units of telework as per above represent identifiable units of working practice with an organisation such that we have parameters within which to target our investigation. Councils would be representative of potential case studies for research, owing in large part to metrics and KPIs that are established within this sector as per government protocol. Metrics and KPIs would provide a measure of output and thus feed our research in terms of the impact of telework for an organisation. We would further posit data in a meaningful form in terms of themes and taxonomies.

THEMES AND TAXONOMY

Taxonomy of telework would add to existing literature as there is no common framework of terms other than three broad categories namely, individual (human resource), organisation and environment (*see* Daniels et al., 2001). Taxonomies (figure 1) are derived from a review of literature and reflect the existing state of telework. Taxonomies would provide a standardised and applicable framework in terms of language for interpretation of research conducted at any given organisation. We find impacts of telework (as reported), to be consistent with the three themes or categories aforementioned. However, we draw an alignment of these themes to the meta-model (figure 2) and substitute each of the three themes with the first three micro and macro level layers (figure 1) namely: 1) **foundation** and **infrastructure**; 2) **security** and **governance**; and 3) **teams** and **communities**, respectively. Within each of these themes exist taxonomies at high and low levels. There are six high level taxonomies (figure 1) namely: **individual**, **employment**, **culture**, **continuity**, **commuting** and **regulation**. For each of these taxonomies there are, at least six low level forms. In this paper, we posit one low level example for each high level respectively in terms of telework benefits: i) **work-life balance** (Shamir and Salomon, 1985. *Cited In:* Bailey and Kurland, 2002, pp.383-384), ii) **recruitment potential** (Baruch, 2003. *Cited In:* Baard and Thomas, 2010, p.2), iii) **teamwork** (Pérez et al, 2005, p.98), iv) **efficiency** (Hill et al, 2003. *Cited In:* Robèrt and Börjesson, 2006, p.522), v) **time and expense** (Di Martino and Wirth, 1990. *Cited In:* Greenhill and Wilson, 2006, p.382) and vi) favourable outcomes with regard to the **budget deficit** (Kbest, 2010). To note, each of the low level taxonomies further divides into sub categories. We find taxonomies to be a comprehensive language form; to utilise with regard to case analysis and findings. Furthermore, we utilise a transformer model (figure 2) to assess data and feedback to stakeholders of an organisation.

3   TRANSFORMER MODEL

Whilst teleworking is not a new concept or reality (World at Work, 2009. *Cited In:* Sener and Bhat, 2009, p.1) over many years it has not delivered widely in terms of modernisation of the workplace (Pyöriä, 2011, p.386). Exponential growth of technology in terms of adoption rates and advancement has each contributed to and cemented the lower level layer of the macro level transformation process (*see* figure 2): today, the infrastructure layer has materialised to the extent that it would now present a firm foundation for teleworking to exist in terms of sustainability and longevity. As the size of each macro level layer correlates to time, subsequent layers would be formed in decreasing time scales. To avoid being left behind, the focus for teleworking now switches to strategic and human resource capabilities within the organisation to adopt and implement teleworking sooner rather than later, in order to maintain position and continuity ahead. Early positioning may also be a potential source for competitive advantage. We do understand that in any type of change we may also be met with resistance to change. There can be a number of restraining forces that decelerate rates of growth. Examples, in terms of the transformer model (*see* figure 2) are as follows. *Layer 1:* to some extent, albeit differently, change may mirror a revolt against technological adoption scenarios of the past namely, that of Luddites (Sale, 1996) that is, a culturally perceived threat to the current working state or foundation of living. *Layer 2:* at a macro level, organisations may seek a level of governance in terms of employment contracts and agreements to establish telework as an official working practice. Governance (*see* Gruber, 2010) would form a protection mechanism that is, a function to layer 1 or telework infrastructure and to promote and create an environment that is hospitable to telework that is, layer 3. Governance would be a driving force of change. *Layer 4:* technology may fall behind in terms of usability to the human, 'soft' demands and needs. Inconsistencies between technology and people, would also be restraining forces telework suitability for an organisation. The transformer model would be a key tool for an assessment of the maturity (*Layer 5*) of an organisation to telework in terms of viability and feasibility.

4   CONCLUSION

Qualitative frames would be a mechanism to align research, and keep telework at the heart of the study. Broadly defined subject matter would cause discussion and investigation to drift and produce an end that is distant from the subject as a whole. A framework oriented approach, would define the parameters within which metrics and KPIs can be deployed and utilised. Taxonomies are a platform of language for communication of telework research, with a view to standardisation across research studies ahead. The transformer model is an important tool, one that would serve to contextualise findings for organisations in terms of telework maturity and a means for organisations to feedback,

refine, and optimise working practice (figure 3). Our research would now move into a phase in terms of an identification of metrics and KPIs that can be utilised within a select case study, and to monitor that data over time that is, to produce tangible outputs of the academic research process. Figure 2 model is a utility framework: a guide for organisational development ultimately to the point where vision and mission is an active, feedback loop to the organisation to maintain their position and longevity ahead.

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WILSON, M. AND GREENHILL, A. G. (2004) 'Gender and Teleworking Identities in the Risk Society: a research agenda', *New Technology, Work and Employme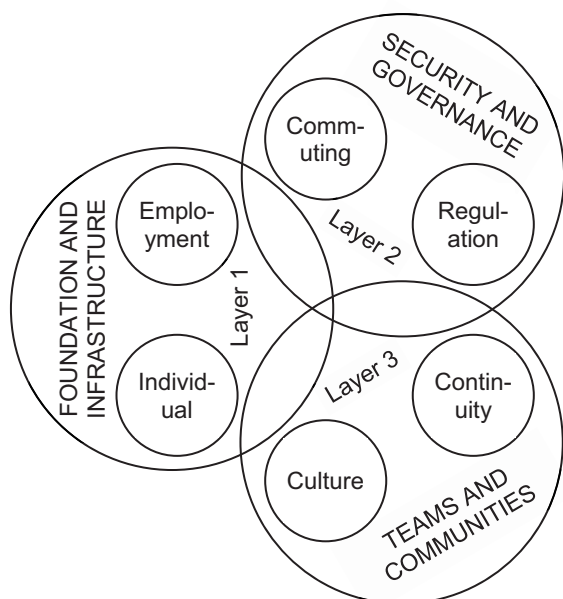nt,* Volume 19, Issue 3, pp.207-221 [Online] Available at: http://dx.doi.org/10.1111/j.1468-005X.2004.00138.x [Accessed: 07 November 2011]

Figure 1: Themes and taxonomy per transformer model
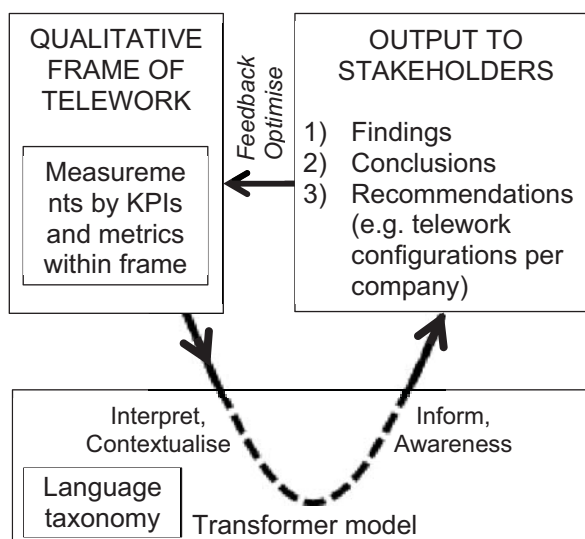
Figure 3: Research process

Source: adapted from [a] Lewin (1951a); [b] Lewin (1951b) and [c] Maslow (1943).

Case parameters:
1) Target audience derived from definition frameworks
2) Measurements taken in the form of metrics and KPIs.
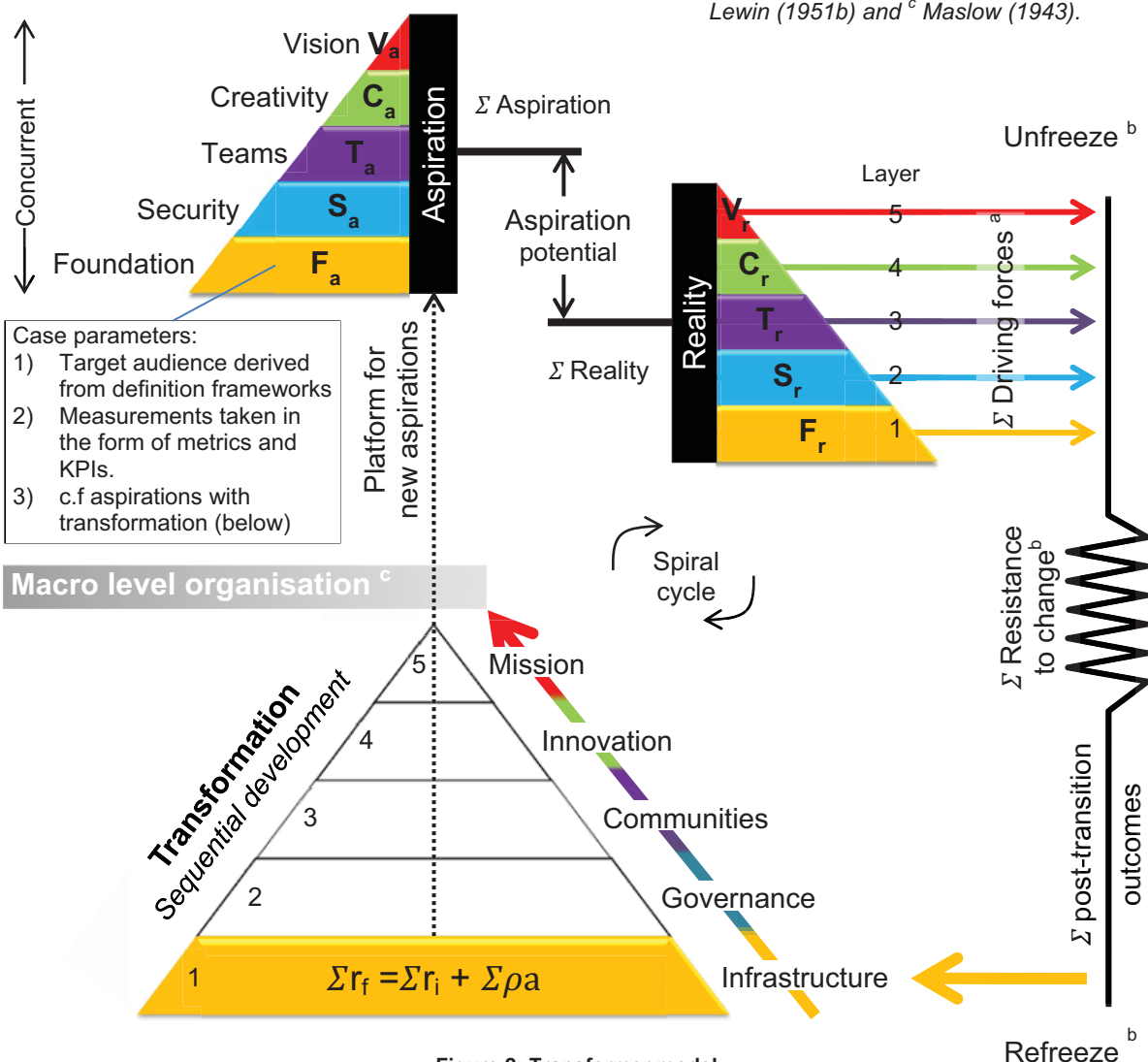3) c.f aspirations with transformation (below)

$$\Sigma r_f = \Sigma r_i + \Sigma \rho a$$

Figure 2: Transformer model