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Women's Representation in ICT Employment: Approaches to Bringing about Organisational Change

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ABSTRACT

Women's representation in Information and Communication Technologies (ICT) employment remains low in the UK and even shows a small decrease over the last 10 years, with a similar picture in Europe. This Perspectives article reviews an approach to bringing about changes in organisational diversity – the so-called 'business case approach'. The business case approach is often contrasted with a 'social justice approach', and many writers argue that the business case approach will be ineffective in the long run without social justice underpinnings. We argue that this is a difficult judgement to make and we make the case for two approaches that might bring about change: the systematic evaluation of existing change initiatives so that effectiveness could be established; and a systems approach to organisational change.

KEYWORDS

Women's employment; science, engineering and technology; organisational practice

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INTRODUCTION

Women's representation in the Information and Communication Technologies (ICT) sector remains low in the UK and even shows a small decrease over the last 10 years. In Europe as a whole the picture is similar, with some small national variation (European Commission, 2004). In the UK women accounted for 25% of the 'Computing and related' workforce in 1997, and in 2008 the figure was 23% (Guerrier et. al., 2009). There is evidence of a particularly low representation of women in the Office for National Statistics (ONS) Standard Occupational Classification's skilled professional roles, such as *software engineer* and *strategy and planning professional*.

Furthermore the mid-career retention of those women who have entered professional ICT jobs also appears to be an ongoing issue (Department for Trade and Industry (DTI), 2005; Griffiths et. al., 2007; Herman and Webster, 2007). Evidence from the United States also indicates a similar mid-career exit (Simard and Gilmartin, 2010).

These figures show that women's low representation in the ICT sector is not going away. Yet, over recent decades a very large number of employer and employee-led initiatives have been set up to try to redress the issue, both in Europe and globally (Dömsch, 2006). The final report of a European Social Fund project lists over 50 initiatives in the UK alone to encourage women into ICT, to increase their retention and to improve their rates of return (Griffiths and Moore, 2006). These include European Union funded projects, as well as UK government sponsored initiatives. In addition, women's networks and women's divisions of professional associations have been established, as well as private and public sector initiatives aimed at supporting women to enter or to return to ICT. This review aims to provide some new reflections on why change initiatives, aimed at increasing the representation of women in ICT employment, may not have achieved the intended outcomes.

'BUSINESS CASE' VS SOCIAL JUSTICE ARGUMENTS

To persuade managers of the need to engage with diversity change, Human Resource and Diversity Management professionals frequently draw on generic 'business case' arguments, including ability to attract people with different talents and skills; better innovation and communication; enhanced service delivery, through ensuring a workforce that 'mirrors' the local community, and potential to 'tap into' new markets (Őzbilgin and Tatli 2008). Yet operationalizing generic business case outcomes appears to be a challenge (Greene and Kirton, 2009). Furthermore preoccupations with generic business case arguments, which lack a clear definition, and/or which do not reflect organisational specific goals are more likely to yield a 'best guesses' approach to organisational change (Kalev et. al., 2006). Business case arguments for diversity are deemed more accessible to managers for whom productivity is the 'bottom line'. Organisations have been quick to adopt business case arguments for diversity that draw on generic

performance benefits (Greene & Kirton, 2009). It is assumed that managers will find business case arguments more engaging and more 'do-able', and thus more persuasive than the social justice arguments frequently associated with the traditional discourse of Equal Opportunities (Noon, 2007). A business case argument appears to be a better fit with the wider discourse on Human Resource Management which emphasises the importance of policies that address individual, as opposed to group, needs (Kirton and Greene, 2005; Foster and Harris, 2005).

The instrumentalism of business case arguments that Noon refers to carries with it the implicit assumption that they are contingent on healthy labour market conditions (Bleijenbergh et. al., 2010: 416). They may also be contingent in the sense that they may apply more to certain sorts of employees than others, for example to professional employees rather than manual employees, particularly where specific skills may be in short supply (Glover and Kirton, 2006; Noon, 2007; Greene and Kirton, 2009).

In much of the employment diversity literature, there is an assumption that measures based on business case arguments are likely to fail, particularly in a cold economic climate – and that change will only be firmly embedded if it is underpinned by the fairness arguments of social justice and human rights (for example Dickens, 1999; Griffiths et. al., 2007; McGlynn, 2003; Noon, 2007). A short-term focus on productivity goals, it is argued, will bring about change that is also likely to be short-term and contingent. Transforming structures and cultures in the 'long agenda' of equal opportunities is argued to be the only way to achieve sustained change, unlike a liberal individualist approach that focuses on the supply of labour within the overall context of business case reasoning (Cockburn, 1989).

One way of hypothesising whether particular measures are likely to be effective in bringing about a sustained increase in the representation of women in ICT employment is therefore to establish whether a measure can be identified as 'business case' or 'social justice'. The implication is that a business case justification would yield only short-term and contingent effects, whilst a social justice one would bring about sustained effects that will contribute to long-term transformational change.

Yet, whilst sympathising with the view that business case arguments need to be underpinned by social justice arguments if policies are to bring about long-term change, our conclusion is that making a clear distinction is not always possible and indeed not useful. For example, whilst on the surface employers may be quite candid about a particular measure in terms of its contribution to the bottom line of performance, it is also possible that employers espouse the principle of equal opportunities perhaps in part because this links to their Corporate Social Responsibility banner. However, this could in turn be argued to be a business case rationale since a reputation and employer brand that appears to focus on social justice could be seen as having a positive effect on organisational performance through shareholder approval. At the same time, it could be seen as a fairness issue, since it could benefit women by improving their quality of life in the short term - although not necessarily in the long term if a particular decision such as

taking on flexible working led to unequal outcomes. This example points to a high degree of complexity and an attendant difficulty in categorising measures as either in the business case 'camp' or the social justice one.

ALTERNATIVE APPROACHES

Against a background of a declining representation of women in ICT employment, we make two points relating to approaches to organisational change. Firstly we put the case that until interventions are comprehensively evaluated there is no way of knowing which work better than others. Secondly we argue that a better approach to bringing about change in terms of women's recruitment and retention in ICT may be to adopt a systems approach. This would take the focus away from 'single initiatives' and put emphasis instead on the inter-relationships and coordination between different change initiatives. We now discuss these two approaches in more detail, basing our arguments on research into the recruitment practices of a sample of ICT firms in the UK (Evans et al., 2007a and 2007b).

Evaluation of Initiatives

In order to be more conclusive about the recruitment policies and practices of the firms that we researched, there is a clear need for systematic programme evaluation. Judging from the figures that we presented above, it could be argued that there has been no success. However, it is at least possible that some have gone some way to increase the representation of women at particular points: for example recruitment could have increased, whilst retention could have decreased. A marked feature of these initiatives is a failure to evaluate their level of success. However, this is only speculation: evaluation is clearly lacking in almost all of the interventions (Dömsch, 2006) and until this is addressed, we can only make a guess about likely effectiveness. The stumbling block appears to be that evaluation would need to be carried out over the long term and, in line with the gold standard of evaluation research, to be built into programmes right from the start (Clark, 1999). The reality is that these are short-term initiatives that are undertaken in the best possible spirit of wishing to bring about change, either because it is believed that productivity will be improved, or because it is believed that a fairer situation will be brought about. What is lacking, however, is a 'hard-nosed' spirit of assessing which initiatives work longer term and which do not. A key issue here is that evaluation of long-term effects requires a longitudinal approach underpinned by long-term funding; yet most of these projects are financed in a short-term way. A recent example is the way in which funding has been withdrawn from the UK's main initiative to bring about change in women's position in science, engineering and technology, the UKRC.

A Long-Term Change Model

A long-term sustainable change could be achieved by working with a different change model and we suggest that systems approaches may be effective. Wentling (2004) suggests that 'single initiatives' – typically the model used in the plethora of initiatives described above – are unlikely to be successful due to a lack of consideration about the inter-relationships between different change initiatives, as well as a lack of co-ordinating structures. Other writers suggest that adopting a systems approach would be more fruitful, given the complexities of introducing

change in the field of diversity (Barnard et. al., 2010; Bassett-Jones et. al., 2007; Kochan et. al., 2002). Whilst systems thinking in the field of management is not new (see Beer, 1984; Morgan, 1986), others suggest that its application to the area of diversity management is under-utilised (Wentling, 2004; Bassett-Jones et. al., 2007). With particular reference to the ICT professions, a systemic approach is argued to be key to approaching the issue of women's low representation:

> The variables that explain the gender gap in ICT work systemically. One of these spheres would not, on its own, suffice to explain the gap: it is the interacting whole that is at the origin of the current situation… The gender gap can only be reduced if we align a series of actions, which will enable us, step by step, to approach equality...an effective, balanced system of good practices, working together on multiple causes.
> (European Commission, 2004: 97-98)

One key feature of a systems approach is that it can help surface 'cause and effect feedback relationships' (Cavana et. al., 2007: 214) thus avoiding assumptions that women will adapt to fit in with existing systems (European Commission, 2004:99). Feedback loops are deemed critical in a systems approach as they can facilitate learning, which then stimulates further change (Kochen et. al., 2002; Shapiro and Allison, 2007). Positive feedback is likely to have an amplifying effect on the change process, whereas negative feedback could have a dampening effect (Bassett-Jones et. al., 2007). We suggest that the adoption of a systems approach could be fruitful in that it could enable the critical evaluation of the influence of organisational structures, highlighted by others as an issue in cultural change (Davies and Thomas, 2000). Crucially, in view of our argument about the lack of programme evaluation, the relationship between systems thinking and evaluation research is a fruitful area to follow as it can help 'enrich our understanding of interventions and why they succeed or fail' (Jackson, 2010:138).

CONCLUSION

The recruitment and retention of women in ICT employment continues to be low, despite many national and international initiatives aimed at alleviating this situation.

Frustration in the early 1990s at the slow progress of gender equality in employment led activists in Britain and elsewhere to use business case arguments instrumentally, favouring an approach that moved away from an explicit quest for social justice (Noon, 2007). The belief was that if a business case for equality could be constructed, this could prove to be more persuasive for employers since it would be without ideology and would be seen as merely a practical step to use available talent. The business case for organisational diversity remains to be proven and there is a strong argument to look beyond it (Kochan et. al., 2003). Kochan et. al.'s argument is that managers would do better to focus on building an organizational culture and human resource practices that are more analytical. This would involve much more sophisticated data collection than at present. This point

takes us back to the need for programme evaluation, which needs to be underpinned by high quality and appropriate data.

We argue that systematic evaluation has not generally been carried out, thus giving little indication of programme effectiveness or ineffectiveness. We put the case for a systems approach: there is a need for organisations to ensure that structures and processes are put in place to enable critical debates to occur, and ensure that outcomes, through feedback, are communicated and acted upon throughout a wider organizational system.

REFERENCES

Barnard, S., A. Powell, B. Bagilhole and A. Dainty (2010) 'Researching UK Women Professionals in SET: A Critical Review of Current Approaches', *International Journal of Gender, Science and Technology,* Vol. 2, No. 3, pp. 361-381

Bassett-Jones, N., R. B. Brown and N. Cornelius (2007) 'Delivering Effective Diversity Management Through Effective Structures', *Systems Research and Behavioural Science Syst. Res.,* Vol. 24, pp. 59-67

Beer, S. (1984) 'The viable system model: its provenance, development, methodology and pathology', cited in Bassett-Jones, N et al. *(2007) Systems Research and Behavioural Science Syst. Res.,* Vol. 24, pp. 59-67

Bleijenbergh, I., P. Peters and E. Poutsma (2010) 'Diversity management beyond the business case', *Equality, Diversity and Inclusion*, Vol. 29, No. 5, pp. 436-457.

Cavana, R.Y., D.M. Boyd and R.J. Taylor (2007) 'A Systems Thinking Study of Retention and Recruitment Issues for the New Zealand Army Electronic Technical Group', *Systems Research and Behavioural Science Syst. Res.,* Vol. 24, pp. 201-216.

Clark, A (1999) *Evaluation Research*, London: Sage

Cockburn, C. (1989) 'Equal opportunities: the short and long agenda', *Industrial Relations Journal, Vol.* 20, No. 3, pp. 213-223.

Davies, A. and R. Thomas (2000) 'Gender and human resource management: a critical review', *International Journal of Human Resource Management*, Vol. 11, No. 6, pp. 1125-1136.

Dickens, L. (1999) 'Beyond the business case: a three-pronged approach to equality action', *Human Resource Management Journal,* Vol. 9, No. 1, pp. 9 -19.

Dömsch, M (2006) 'Quality Management in Gender and Diversity', in *European Commission, Women in Science and Technology – the Business Perspective*, Brussels: DG Research.

DTI (2005) *Towards a Business Case for Diversity*. London: DTI.

European Commission (2004) '*Widening Women's Work in Information and Communication Technology'*, Fondation Travail-Université ASBL, http://www.ftu-namur.org. Accessed 05/04/2011.

Evans, C., J. Glover, Y. Guerrier and C. Wilson (2007a) *Effective Recruitment Strategies and Practices: Addressing Skills Needs and Gender Diversity in ITEC and Related Sector.* London: DTI.

Evans, C., J. Glover, Y. Guerrier and C. Wilson (2007b) *Implementing Diversity Policies: Guiding Principles.* London: The Royal Academy of Engineering.

Foster, C. and L. Harris (2005) 'Easy to say, Difficult to Do: Diversity Management in Retail', *Human Resource Management Journal,* Vol. 15, No. 3, pp. 4-17.

Glover, J. and G. Kirton (2006) *Women, Employment and Organisation*. Oxon: Routledge.

Greene, A.M. and G. Kirton (2009) *Diversity Management in the UK.* London: Routledge.

Griffiths, M., K. Moore and H. Richardson (2007) 'Celebrating Heterogeneity?: A survey of female ICT professionals in England', *Information, Communication and Society*, Vol. 10, No. 3, pp. 338 – 357.

Griffiths, M. and K. Moore (2006) *The Women in ICT Final Report*. University of Salford.

Guerrier, Y., J. Glover., C. Evans. and C. Wilson (2009) "Technical, but not very….." Constructing gendered identities in ICT-related employment. *Work, Employment and Society,* Vol. 23, No. 3, pp. 494-511

Herman, C. and J. Webster, J. (2007) Editorial Comment, *Information, Communication and Society - Special issue: 'Gender and IT',* Vol. 10, No. 3, pp. 279-286.

Jackson, M. C. (2010) 'Reflections on the Development and Contribution of Critical Systems Thinking and Practice', *Systems Research and Behavioural Science. Syst. Res.,* Vol. 27, pp. 133-139.

Kalev, A., F. Dobbin, and E. Kelly (2006) 'Best Practices or best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies', *American Sociological Review,* Vol. 71, August, pp. 589-617.

Kirton, G. and A. M. Greene (2005) *The Dynamics of Managing Diversity. A Critical Approach.* Oxford: Elsevier Butterworth-Heinemann.

Kochan, T., K. Bezrukova, R. Ely, S. Jackson, A. Joshi, K. Jehn, J. Leonard, D. Levine and D. Thomas (2002) *The Effects of Diversity on Business Performance:*

Report of the Diversity research Network, www.solargeneral.com/library/diversity-at-work.pdf, accessed 20/7/2010.

Őzbilgin, M. F. and A. Tatli (2008) *Global Diversity Management. An Evidence-Based Approach*. Hampshire: Palgrave Macmillan.

McGlynn, C. (2003) 'The Status of Women Lawyers in the United Kingdom', in Schultz, U. and Shaw, G. *Women in the World's Legal Professions,* pp. 139–156*,* Oxford: Hart.

Morgan, G. (1986) *Images of Organization*, London: Sage Publications.

Noon, M. (2007) 'The fatal flaws of diversity and the business case for ethnic minorities', *Work, Employment and Society*, Vol. 21, No. 4, pp. 773-784.

Shapiro, G. and M. Allison (2007) 'Reframing Diversity. Board Executives and senior diversity professionals working together for strategic impact'*. Diversity Professionals*, www.diversityprofessionals.ork.uk, accessed 29/4/2010.

Simard, C. and S. Gilmartin (2010) *Senior Technical Women: A Profile of Success,* California: Anita Borg Institute for Women and Technology.

Wentling, R. M. (2004) 'Factors that assist and barriers that hinder success of diversity initiatives in multinational corporations', *Human Resource Development International,* Vol. 7, No. 2, pp. 165 –180.