

Published in:-

Quah, L.K. (editor) (1998) Facilities Management and Maintenance – The Way Ahead Into the Millennium, McGraw Hill Book Co., Singapore, pp25-32

TELEWORKING - LIBERATION AND SLAVERY FOR THE 21ST CENTURY

Scenarios for a technologically-enabled future

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Abstract

The nature of the working environment in the next century will be driven by information technology (IT), but its detailed form and operation will be shaped by human response to the threats and opportunities which it presents. This paper applies a scenario planning approach to examine possible future developments of IT-based teleworking, and their impact upon user perceptions of facilities. Some writers take an exclusively positive view of teleworking opportunities, concluding that it allows “almost anything to be done anywhere. The only question remaining is ‘What do you want to do?’” [1] For these writers, the location and timing of work will be a matter of self-determination for individuals. At the same time as technologically-enabled patterns of working are being propounded as an ideal future, research [2] has indicated that organisational performance is related much more strongly to the management of people than to new technology. Our research indicates that assuming that a technologically-enabled future will be a successful one is a dangerous presumption. The scenarios outlined are intended to guide forward thinking managers towards a proactive and prepared approach to management of buildings and facilities, in support of organisational and user needs.

Keywords:- environment, location, scenario planning, teleworking, users

1 Introduction

This paper sets out a position with regard to the possible roles and influence of IT-based developments in the field of work, from the micro- to the macro- level, from the points of view of individuals, organisations, and society. The findings of the study are based, not upon use of empirical or statistical analysis of current data to determine a probable future but, upon application of a scenario planning [3] approach in determining the different ‘futures’ which may logically develop from the present. Each of these futures is based upon interpretation of the present and, in accordance with the principles which distinguish ‘scenarios’ from ‘stories’, each includes an outline of possible implications, in the event of its partial or total realisation. In addition, the writers set out the trends which might provide evidence of the extent to which each, or all, of these scenarios is being realised in the future.

In examining the implications of the scenarios for the field of facilities management, the writers do not discuss facilities process outcomes; the technical and operational solutions to the problems highlighted; rather, they seek to provide insights into the general and strategic management agendas which will drive facilities

procurement and use in the next century - to provide a decision-making framework for facilities managers at the strategic level.

2 Technology as liberating force

The 1990's have seen explosive growth in all forms of IT-based working, as the power of the microchip has increased exponentially, and the cost of computing has dropped year-on-year. Most members of the workforce now deal with computerised work processes, from those who work in the micro-electronics industries, to office workers in the world's financial centres, to car mechanics and supermarket check-out assistants. Exponents of the computerised future envisage the availability of ever-larger and more powerful processors as beneficial - providing unlimited access to knowledge, permitting access to wider ranges of jobs, and 'empowering' people. The technophiles dream of a future in which everyone has freedom to decide where, when, and how they will work. George Bush, whilst holding the presidency of the U.S.A., stated [4] that "millions have already found their productivity actually increases when they work nearer the people they're really working for - their families." Others [5] state that "technology will, at some stage in the future, allow almost anything to be done, anywhere. The only question remaining is 'What do you want to do'?"

The implications of such a dramatic change to the nature of work, in terms of locations and use of 'concrete' settings, would be dramatic. Those who see the future of work being non-locational talk of organisations which will cry "Tear down the walls. Send your workers home. The company of the future.....is not housed in some corporate castle on the hill. It's spread across the land, in cars and living rooms, in client's offices and hotel-like modules" [6]. For these seers, the future is one of focus on the individual who is an empowered knowledge worker, with large amounts of self-determination in regard to the setting, timing and nature of work.

Others, however, see danger in the blind acceptance of Bill Gates' "technowet dreams" [7] of a self-determined future for all in a globalised world, when the stark reality is that two-thirds of the population have still never set eyes on a telephone! For many in large organisations, the reality of IT-based working to date has been 'downsizing', with "a devastating toll on job loss, disrupted careers, and threatened families." [8] The extent of the personal, financial and emotional loss to individuals negatively affected has been poignantly documented in numerous sources [9], which highlight how "non-permanent jobs can mean greater job insecurity, which has implications for the purchasing power of the individual". [10] As some organisations view technology as their cost-reducing salvation, research [11] indicates that people-focused, high performance Human Resource Management (HRM) practices can produce productivity gains which are up to five times greater than those achieved through new technologies.

He who predicts the future lies even if he tells the truth.

Arab proverb

It is not the role of this paper to make judgement on the rights and wrongs of each of the above arguments, or to make any predictions on the likelihood or otherwise of their becoming reality. The above summaries are intended to indicate the extremes of the argument in support of, or warning against, an IT-driven future for work. In the following sections, the writers will explore the driving forces which may determine

how the future unfolds, provide a scenario overview of the possible outcomes, and highlight the indicators which should be sought by those who will require to make proactive, strategic decisions on facilities design, provision and use.

3 Scenario planning - looking to the futures

The origins of scenarios as a strategic planning model are to be found in the Second World War, when the US Air Force developed the approach of imagining different views of what its opponents might do, and preparing alternative strategies for response. The development of scenario planning as a methodology for organisational strategic thinking took place in the early 1970's, with Pierre Wack's work for Royal Dutch/Shell, in which he and his colleagues developed alternative scenarios for the price of oil; seeing it as a strategic commodity. Whilst the team did not predict that there *would* be conflict in the Middle East, and that the outcome *would* be a global energy crisis, their depiction of possibility, which included such alternatives, allowed Shell to react more rapidly than its competitors, and from being "the weaker of the 'Seven Sisters', the seven largest global oil companies, it became one of the two largest and, arguably, the most profitable." [12]

Scenario planning, then, is not about predicting *the* future, it is about seeing the limits of possibility. "The end result, however, is not an accurate picture of tomorrow, but better decisions about the future." [13] Pierre Wack expressed the view that "scenarios deal with two worlds, the world of facts and the world of perceptions." [14] The writers would contend, however, that we live in a world in which there are few 'facts' - beyond the indisputable 2 plus 2 equals 4! - and that we must deal with a world in which there are *only* perceptions and interpretations.

Whilst there are a number of different methodologies for constructing scenarios, the writers have adopted that of Peter Schwartz [15], which is characterised by the use of three scenarios, on the basis that "people's minds can cope with only two or three possibilities. Two may not capture reality, so you often use three." [16] The three views must be sufficiently different to show real choice in options for the future, but it is "easy to offer a bland assortment in which one represents the high road, one the low road, and one the average of the two." [17]

4 Determining the driving forces

In setting out to examine scenarios for the future of IT-based work, we must first identify the key driving forces which will impact upon the nature of work in the future, both at the macro- and the micro-environment levels. We must decide which of these forces will be constant across all scenarios, and which will set the scene for all our considerations. Thereafter, we must examine those forces which will be subject to variation within our scenarios, and which will form the basis for establishment of the 'limits of the possible'. In the former category, lies the provision of a technology-based infrastructure for society. No matter what views are offered by any sources on the nature of future society, all writers agree that technology will continue to grow in the foreseeable future, and that the power of the available processing will be immense. In the latter category, we can be reasonably certain that there will be a continued

tendency towards globalisation of trade and access to information, but the actual detail of the alliances formed and the balance of power between them will be to a large extent unpredictable.

In considering the forces that will be of greatest significance, the writers would argue that the major variables lie in the fields of power and knowledge [18]; who owns and has access to the latter, and who wields the former. Power over knowledge and information may lie in the hands of governments, businesses, groups, or individuals - or any combination of them all to different degrees. At the macro-level, the relationship between the power of governments and businesses will affect the location, stability and mobility of work, whilst, at the micro-level, the power of the individual will affect the distribution of knowledge, education, wealth and work.

In the following sections, we set out the framework for 3 scenarios which deal with these relationships in different ways.

5 The Official Future

In this scenario, there is continuing growth in the 'knowledge economy', with major investment in, and return from, service organisations. In this future, partnerships are the key - between businesses and governments, and between individuals and organisations. This world is characterised by Charles Handy's 'portfolio workers' [19]; self-directed and flexible workers who have enriched job opportunity and motivation. These workers provide effective resources to cost efficient businesses, which are able to staff up according to need, whilst the workers seek performance related pay and frequent opportunities for change. In this world, the organisation sees its people as its key resource, but not as its life-long partners.

With the support of governments, organisations will form teams and networks across timezones. Work will be distributed by and large across cities, as major centres of population, but will also be accessible to a degree in rural areas, where infrastructure development will create new opportunity.

The prosperity of this future will not be shared by all. Those who lack access to technology, and therefore to knowledge, will be excluded from the new job opportunities. There will be increased differentiation and isolation for those members of both local and global societies. Where there is capability for transfer of work, at short notice, across regional and global boundaries, there will be increasing competition for available work, both at individual and global levels.

The facilities implications for this scenario are characterised by user-responsive, adaptable environments, which will be attractive to those whom the organisation wishes to attract, but which will be rapidly changed, or disposed of, when business change so demands. They will be both efficient and effective, and will meet both objective and subjective quality criteria for the organisation and for the users.

6 Paradise

In this future, there is almost infinite growth in the service economy. With unlimited access to knowledge-based work, the power lies very much with the individual, and is well distributed across society. Businesses support individual choice in terms of where

and when people will work, whilst people attach much greater importance to choices about their enabled lifestyles beyond the workplace. As people seek locational and time freedom, the 'workplace' is characterised by where the people are. Technology is of far greater importance than buildings. Jobs are dispersed across urban and rural communities, with those who choose to live outside the city centres no longer electing to spend large parts of their lives commuting into them. For those who choose to live in the remotest of locations, technology provides access to the knowledge economy, and the scale of that economy provides access to employment.

Whilst there is, in theory, opportunity for all, this is seen only in first and second world countries. Third world countries are left largely to fend for themselves, in a world which is dependent upon different technologies, and which exists in a different economy.

In this future, the facilities implications see a change in focus from large buildings and mass transit transport infrastructures, to rural regeneration, and distributed populations and power. With limited need for large capital investment, and with flexibility of its relationships with its people, business sees costs reduce, whilst productivity increases. Facilities are more 'virtual' than 'concrete', but those that are physical will be of diverse form, an expression of the 'self-actualization' [20] needs of the user.

7 Bladerunner

Here is a future in which power is great - but only for the few. Knowledge is tightly controlled by the elite portfolio professionals, and by the few transnational corporations which control the global economy. Governments have little or no control over these businesses, which can move capital and employment across the globe in an instant. There is unlimited organisational choice in the selection of a mass of low cost, late night workers, who have no access to the organisational systems, beyond the dumb terminal on which they process standardised transactions.

To business, reduced cost is primary, and the organisations have moved to a Foucauldian [21] extreme - beyond control of the body to control of 'the whole person'. In this highly segmented labour market, ordinary people queue for available jobs, both physically and electronically. As businesses move capital to suit their own needs, governments see reduced tax income, and investment in social infrastructures declines. Here is a world of vast empowerment - but for very few people.

The facilities implications of the Bladerunner world are stark; a world of low cost, mass transactions in structures which are as temporary as the jobs they accommodate. The major investment is in large-scale, central processing of knowledge, with distribution of dumb terminals and controlled access to knowledge on a 'need to use' basis.

8 Seeing beyond the present

The writers would offer the consolation that none of the above 'stories' will come true - with the warning that all will come true! It will be a matter of degree, in a world devoid of 'black and white' meaning. In which case, the reader may ask "So what?".

If those who make strategic decisions on facilities investment and design for organisations are to make informed decisions, on solutions which are to be delivered on time in a rapidly changing world, they must be forewarned and forearmed to deal with any and all eventualities. Whilst the above scenarios may present views of a future which is, at the same time, both depressing and optimistic, dangerous and safe, they serve no purpose if *any* part of them comes true whilst the organisation has carefully laid its plans for a different outcome. In order for the scenarios to serve some purpose for forward thinking facilities decision makers, we must determine the trends which will lead us towards informed decisions, based upon likely outcomes.

The writers would offer the following trend analysis, as tools for identification of ‘milestone events’ which might be indicative of whether control over knowledge and power is tending towards business, to governments, or to people at the individual level. From these trends, it should be apparent which set of facilities implications are most likely to come into play at a particular point in time.

The major trend analysis must lie in the area of power balances; whether power is seen to lie with individuals or with businesses at the micro-level, and with governments or businesses at the macro-level. The contribution of businesses may then be analysed, in terms of whether they tend towards an altruistic or an exploitative approach to people management, and whether they take a long term view of their investments in people and jobs, or one based upon immediacy.

Beyond these macro-considerations, we may start to analyse the types of job on offer; whether these are autonomous and integrated, offering empowerment to the individual, or controlled and differentiated, placing power in the hands of the organisation. Further job analysis may be undertaken in terms of location; whether this is based upon individual choice or organisational selection, and whether jobs are seen to be concentrated within dense urban locations or are dispersed and remote.

In predicting long term employment trends, it will be of value to examine educational trends; whether access to knowledge is widened through an accessible and supportive educational system, or is controlled and limited through an elitist and divisive system.

Finally, in dealing with IT-based employment opportunities for the future, we must consider the growth of IT itself. Will we see a continuing development of distributed intelligence and mass access to software, or will we see a move back to central processing, where the almost unlimited power of future software and processors is accessible to the many only through dumb terminals, and only to the extent that business allows.

9 Conclusion

As the writers have stated previously, this paper does not set out to provide any answers to strategic questions, let alone provide operational answers. It does not deal with ‘fact’ or with ‘certainty’. It approaches study of future possibility from the viewpoint that “everything is vague to a degree you do not realize till you have tried to make it precise.” [22]

One thing is certain, however, from our studies of current thinking and future possibility. That is that “man’s future with smart machines will involve new variations on the old theme of master and slave. We will control our machine-intelligent

superiors. We will live with them, create with them, adapt with them, maybe even reproduce with them. We will hold the strings while they hold ours. Both masters and both slaves. The question will be to what degree.”[23]

Many of those who make strategic business decisions, which will affect the facilities needs of their organisations, see the application of the scenario planning approach as being key to their ability to survive in an unpredictable world, in which there is little - and reducing - scope for expenditure which cannot be seen to contribute to the effectiveness and efficiency of the organisation. Those who hope to provide the facilities which will meet the organisational need must be prepared to meet any or all of the challenges which will be put to them. It will not be sufficient in the next century to offer businesses what the supplier thinks they might, or should, want. Nor will it be acceptable to await the demands of business before making any attempt to design the required solutions.

Facilities design for the twenty-first century must be based upon proactive planning to meet any and every eventuality.

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