

Report on the ISF/Demand Workshop on Office (Work) Futures

22nd June 2016

Lancaster University

Noel Cass

Demand Centre/Sociology

Summary of Workshop

The ISF agreed to support this workshop with up to £1000 funding in May 2016, and the workshop was organised to shape thinking in the Demand Centre in follow-up research emerging from the centre's project 3.2 on office building design, which had focused on London office building speculative development projects 2010-15. The workshop was designed to focus on what we heard in our (c. 50) interviews about identifiable trends in a number of areas, e.g.: office building design (particularly fit-out) following trends set in the 'cool' Tech, Media, Telecom sector; changes in the nature of organisations and work (less formality and hierarchy, more team-working, flexible and agile work etc.); and rapidly changing technology and devices – mostly more energy efficient but with rebound effects due to the proliferation of devices.

Researchers and authors from across the University and beyond were approached at fairly short notice (due to the short lead-in of funding and a spend deadline) to contribute presentations or responses to a <u>background paper</u> that was circulated in advance. The result was the attendance of the following participants:

- Adrian Friday (Lancaster: Computing and Communications)
- Torik Holmes (Lancaster: Sociology)
- Lisa Wood (Lancaster: Medical School)
- Karen Dale (Lancaster: Organisation, Work & Technology)
- James Faulconbridge (Lancaster: Organisation, Work & Technology)
- Jan Bastiaans (Lancaster: Energy Manager)
- Nick Dunn (Lancaster Institute for the Contemporary Arts)
- Gibson Burrell (Leicester: Management)
- Janine Morley (Lancaster: Computing and Communications)
- Cathy Garner (Work Foundation)
- Matt Thomas (Lancaster: Management)
- Dimitra Dantsiou (Cambridge: Architecture)
- Ian Jones (Leeds: Institute for Transport Studies)
- Luigina Coilfi (Sheffield Hallam: Cultural Communication and Computing Research Institute)

The full programme of presentations and discussions is given in Appendix 1. The broad programme was organised in the following sessions:

1000-1100 Welcome, Introduction to the ISF and futures thinking, Framing the discussions

1100-1200 The future of office work: mobile, agile and flexible?

1200-1300 The future of 'the office': the sites and times of office work

1400-1500 Future technologies and the tools of office work

1500-1600 Drawing out the implications and scoping future research programme

The notes of the presentations and discussions are listed in Appendix 2, and power-points from the day are available on the 'Office Work' section of the DEMAND website.

Post-workshop feedback and summary

A number of participants provided feedback on the workshop:

Adrian Friday suggested that future research in this area of office work practices might consider 'mixed methods' studies where device use/network use are logged and the data used to try to unpick the impacts of practices associated with work, as 'data logging' might provide some interesting insights on emerging work practices (where people are to focus, task switching, multiple device use etc.). This might provide some kind of accounting/analytics on whether or not there is a net gain or reduction per head in energy or externality impacts.

Matt Thomas made three suggestions for further work arising from the workshop as follows;

- 1. To understand the extent to which mobile/flexible working was a *substitute* or *supplement* to office work. There seemed to be an assumption that it could or would substitute for office work thereby reducing the need for office space; experience suggests that it is a supplement to office work which is still needed for many types of interaction
- 2. How do office requirements vary between different organizational types? My research is doing exactly this by taking a strategic perspective on organization types. I am using a framework proposed by Mintzberg that labels organizations as either Machine, Entrepreneurial, Professional or Adhocracy. I am using space syntax methodology to analyses the offices of 1 example of each
- 3. To understand the rhythms of interactions in offices better (time signatures). I have a large amount of field data on this subject from a single law firm. I have something like 1,000 observations of interactions that vary in time and space from 30 second interactions across desks to all day workshops with clients in a boardroom (and everything in between). I have not finished processing this data yet. The inspiration for this work was Lefebvre's Rhythmanalysis.

lan Jones noted the research problems created by the huge multiplicity of different forms of 'office work', including 'front-facing' and support work, but also different functions of each. There are also sectoral differences, where staff in e.g. architecture, academia, finance, engineering and IT all spend a large part of their time either in meetings or in front of a computer. Also, daily work is rarely cleanly sliced into easily identifiable segments meaning that any given work hour even in one sector or for one type of worker might consist of several work practices and activities of different lengths, with different people or alone, of different functional type (emailing, meeting, talking, writing) all using different devices or technologies (or none). The issue arising is what would researching the above diversity tell us about 'office work', with a particular eye towards understanding the future of office space/work? He suggested three potential avenues. The first is collecting original data. The second is determining what data exists already, likely held by consultants. The third is looking at

ethnographic studies. Ian also provided the following reading on business travel and ethnographic work on the actual work practices of planners and Xerox workers:

- Jones, A. (2013). Conceptualising business mobilities: towards an analytical framework. Research in Transportation Business & Management, 9(0), 58-66.
- Hoch, C. J. (1994). What Planners Do: Power, Politics, and Persuasion. Chicago, IL: Planners Press, American Planning Association.
- Forester, J. (1989). Planning in the face of Power. Berkeley, California: University of California Press.
- Orr, J. E. (1996). Talking about machines: Enthography of a modern job. Ithaca, New York: Cornell University Press.
- Orr, J. E. (1990). Sharing Knowledge, Celebrating Identity: Community Memory in a Service Culture. In D. Middleton & d. Edwards (Eds.), Collective Remembering (pp. 169-189).
 London: Sage Publications.

Dimitra Dantsiou reflected on the transformations to the role and culture of office space and culture under globalisation, technological changes and urbanisation highlighted by the workshop. She related these insights and questions to her own work focussed on Universities, and the spatial, technological and energy characteristics of the evolving educational workplace, asking how Universities (and by extension, other organisations) can shape modern working practices, what types of workplaces will be needed in the future, and what the role of energy use feedback might be. She provided the following papers as further reading:

- Dantsiou, D. and Sunikka---Blank, M. (2015) 'Why does energy use feedback not work in workplaces? Insights From Social Practice Theory.', in *ECEEE 2015 Summer Study --- First Fuel Now*, Toulon, 2227-2236.
- Harrison, A. and Hutton, L. (2014) Design for the changing educational landscape: space, place and the future of learning, Routledge, London And New York.
- Palm, J. And Darby, S. (2014) 'The Meanings of Practices for energy consumption A comparison for homes and workplaces', Science & Technology Studies, 27(2), 72---92.

Elizabeth Shove provided observations about the workshop discussions, summarised, extended and explored below as a summary.

Summary of Discussions and Possibilities

There was relatively little about **how to** *conceptualise* **futures** either of offices or office work. 'Ecological' visions of smart cities and homes are often linked to an image of flexible or home working. Grey literature consists of loose 'visions' of work which may be collectively influential or performative, but we have little understanding of **the** *current situation* or of recent trends in the meaning, nature and extent of office work. There might be link to ideas of 'the city', and evidence of urban change, e.g. what percentage of cities are 'offices', and is this shifting?

There was more on matters of *employment status* and new forms of *inequality*, e.g. the 'precariat', and of the labour involved in enabling 'uberisation' and on-demand services, but with no anchoring in an account of office work and its organisation. This was more an account of specialised vs generalised knowledge/work divides.

There is something interesting about **the nature of the** *working day*, the **composition of work** (solo, collective) and **where it takes place**. This might be revealed by some kinds of time-space geographical mapping of 'office work': it seems convincing that lots f work is being done on detethered devices rather than paper being carried around. Iain Jones notes that travel has embedded itself into (certain) business practices. Lisa Wood (on ambulance crews) talks about the mobile equipment needed to act as an emergency response team: implying that ambulance crews might be a model for the 'future' office worker. There is no doubt that laptops and wireless have detached work, but what does this mean for space and time and practice? Cathy also highlighted the potential death of the 'big office', but that offices still have roles for organisations, which are increasingly smaller and more dispersed.

On the *space of work*, Luigina notices a company that is providing 'home' office furniture – in an intriguing colonisation of space, and also notes that workers have several digital identities: both personal and as a 'worker'. Janine recognises the personalisation of 'office' computers, and the use of one's own equipment at work. There are further questions, which are interesting, about whether *practices blend* by virtue of being *online*: e.g. people check insurance themselves, book flights, ask the CAB questions and get answers online, and take over what used to be office work for others.

Karen Dale and Gibson Burrell focus on *emotional attachment* to office space: as it is inhabited and lived in (as in home), or merely used (as in an hotel). They argue that this plays out in terms of the sense of 'whose space is it', which is a further enactment of employer-employee relations, including those of surveillance and control/management. They note the new managerial challenges of supervision of the absent, and the rise of self-management. Cathy repeats this point, noting the social politics of presenteeism, and also of email-presenteeism. There was the point that as with hotels, uniformity enables movement and diversification of locations – standardisation of wireless, etc. is vital.

James, on the office standards story, underlines the idea of **provider and consumer**, in which case the developer is the provider for the investor – of a marketable product; but in which 'actual' consumers, i.e. those who rent space are marginalised in that their 'requirements' are subordinate to the terms, conditions and criteria around which property markets are organised. So **what does this mean for 'future' provision**: one aspect is that the **infrastructure is** trundling along on a pathway that is to an extent **disconnected from office practice**. However, later, Janine's work suggests that the nature of this connection, and the equipping needed for officing is perhaps becoming more flexible so although costly, the disconnect doesn't prevent office work going on.

Jan Bastiaans (in common with most FMs) is meanwhile grappling with the unknown: the assumption is that an office is where people turn up for work and that it is a 9-5 site. However, the ways in which offices are used is shifting in untracked and not necessarily predictable ways.

What next?

As a result of the workshop, and subsequent research, activities and conversations, it has been decided that a research proposal will be drafted, exploring a number of issues arising from the exploratory Office Work Futures research. This work is ongoing and detail can be provided as it takes shape to interested parties. At the moment it is likely that the research will involve collaboration

between Lancaster and Reading University, and it will look at the extent and nature of flexible/mobile work, office and non-office work practices and devices, digital and 'traditional' office infrastructures, and changes at the urban level in real estate, land-use and transport.

Appendix 1: Programme of Workshop

1000-1100 Welcome and framing the day

Welcome and housekeeping, introductions – Noel Cass, Demand Centre

Introduction to the ISF and futures thinking Nick Dunn, Institute for Social Futures and Lancaster Institute for Contemporary Arts

Future offices and office work: what is the office, where is the office and whose office is it? Framing the discussions – Noel Cass, Demand Centre

1100-1200 The future of office work: mobile, agile and flexible? – presentations and discussion, chair Elizabeth Shove

Offices and evolving work practices - James Faulconbridge, Organisation, Work & Technology

Organisation and space in the context of office work futures – Karen Dale, Organisation, Work & Technology

1200-1300 The future of 'the office': the sites and times of office work - presentations and discussion, chair Noel Cass

Mobile and remote working – the implications for 'the office' - Cathy Garner, The Work Foundation

Business travel and mobile work - Ian Jones, Leeds University Institute for Transport Studies

1400-1500 Future technologies and the tools of office work – presentations and discussion, chair Noel Cass

Collaborative and agile work - Lisa Wood, Lancaster Medical School

Mobile work/life and technologies - Luigina Ciolfi, Sheffield Hallam University Communication and Computing Research Centre

Connectivity, Wirelessness and Home - Janine Morley - Demand Centre

1500-1600 Drawing out the implications and scoping future research programme

The implications for future University offices and energy demand - Jan Bastiaans - Lancaster University Energy Manager

Shaping the Office (work) Future(s) mini-project and future research – discussion facilitated by Elizabeth Shove, Demand Centre

Appendix 2: Workshop Presentation Notes

The following is a summary of discussion, primarily written up from notes taken during the workshop – it is therefore necessarily brief and telegrammatic.

Nick Dunn - Introduction to the ISF and futures thinking

Lancaster Institute of Contemporary Arts (LICA) and ISF – The Future City, Urban Studies.

Futures thinking is often technological not arts and humanities based, having social dimensions too. It often involves back-casting from potential futures.

'Future Cities' have been imagined for many years: seen as being Productive, Liveable, Sustainable, Well-being. Such thinking focuses on not just buildings but also lifestyles and mobility. Nick has worked in the past on "A visual history of the future"; visions as reflecting the cultural and social values of the times.

Mobile and home-work has re-emerged as 'eco-' (i.e. environmentally desirable), and the 'answer' is smart everything. Knowledge = control (or does it?) ... the appeal of the novel. All predicated on efficiency and technofix approaches. Technical solutions however are still 'buggy', and technology might simply reproduce the power architectures that produce them.

Socially more atomised (technology based) – reacting to the 20th Century? The younger generation no longer has access to e.g. the suburbs, so instead go for a 'downloadable' life – they need shared spaces, better transport, wifi. Future Cities (see http://eng.gruppohera.it/group/)

Third-space work: technology can move out of the workplace. Commodified on-demand services are non-specific, as opposed to personalised services (Uber etc).

Discussions and questions:

- AF there is an 'always on' model. Embodied energy is 'not there'.
- Is this neo-liberal? Gig economy entrepreneurship? In whose benefit? These are political matters
- DD Is the future city energy saving? In workplace, is there a role for information to change behaviour? Or is it delegated to smart systems/technologies?

James Faulconbridge - Offices and evolving work practices

Reconcile 'unknown' user needs (in speculative office development) with 'what we know is 'needed'' – which is a set of cultural and normative expectations, not necessarily linked to actual end user needs.

Designers provide a building shell, and organisations provide the rooms etc., the fit-out, to how people work. Other workers are invisible (for example cleaners?)

Discussions and questions:

- These are 'luxury offices', but other ones are available too...!
- CG Is that because they are speculative buildings?

Karen Dale - Organisation and space in the context of office work futures

The background paper for discussion presented a rhetorical and ideal picture and trends, the material about top-down managerialism resonated. Space is <u>lived</u> (and experienced through emotions). Not as conceived, planned, managed, by power, the organisation, and as part of the economy. The economy is, at the end of the day, embodied practice.

The Charles Carter building at Lancaster University was built to a BCO spec, with 4 floors, but an academic occupancy level are c. 1:125m² [or 125 people]

Aestheticisation is a process in office and work changes, (which futures?) with energy implications. 'Cool' obscures the e.g. power/economic relations -> it anaesthetises occupants to power.

Identity is at play: workers are encouraged to identify (with organisation)

Transparency (of building/organisation) – is a play on words/meanings. But glass walls fit this model of transparency. This model is claimed to have spread, but where is the proof of this?

Our identity is lived through living corporate spaces. We are a Consuming self – expressing choice and autonomy at work [the expectations of the Uni mirror those of usiness] Who is 'the consumer' of a building? 65% of businesses have less than 50 employees.

There are entrepreneurs within the Management School, and incubation spaces. Business as the model for other sectors. We can think of an Eco-system of different types of office spaces.

[GB?] Users, occupants, residents – different categories/roles of building 'users'. Who imposes these roles and model? Often Facilities Managers.

There are implications of office designs on actual work practices – interruptions and attention (open plan/transparent?): a need to focus, surveillance and control.

Discussions and questions:

- JF who is defining their new work practices? Who proliferates these ideas?
- More functionality is needed in offices, more diversity but is it actually needed? Does it simply increase expectations?
- ES is it more relevant to think about the changing relations of alone and team-work?

Cathy Garner - Mobile and remote working - the implications for 'the office'

The changing nature of work – for some? For knowledge workers. Co-working spaces, 33% of people are in organisations with fewer than 9 employees. There are 'transaction costs' to pulling work together when it is remote/agile. Linked to stages of organisations – start-up spaces and 'second round' (when have secured more funding) spaces.

More complex lives and responsibilities, aging population, illnesses, disconnects. Commute has an impact on health, on diet, no exercise. Why would you want to?

The death of cities??

Uberisation – privilege to work flexibly. Technology is necessary but not sufficient for 'good work', Face 2 Face work is still required? Trust is an issue with distanced work.

Ubiquitous tech – how to rejig the individual-organisation balance? Pluses and negatives for each. Working 55 hrs increases the chance of stroke by 33%

How to manage mobile workers -> move to an output model, constant review productivity. Does productivity increase with mobile work? Has been shown in some cases e.g. BT and flexibility. Over 26 weeks employment = right to flexible work. Labels cover up the diversity under positives and negatives for employers and employees.

Mobile Work versus mobile work. Model versus reality – "selling the vision of the mobile worker"

There is also micro-mobility e.g. within building.

Discussions and questions:

- Email 'presenteeism'? (AF) It is now part of organisational culture.
- Mobile work won't kill the office, there are expectations from clients or assumed expectations from them.
- Architectural design of the 'home office' has huge commercial opportunities the corporatisation of the home?
- Flexibility is important in office spaces BUT also have to bear in mind resale: so they have to be generic[?]

Ian Jones -Business travel and mobile work

There will be no virtual technology "death of the office" – but a blended future instead.

What is office work? – depends on the sector. There are historically fairly stable levels of business travel blending the virtual and the non-virtual offices and work.

Office space is increasingly flexible and yet there is still the need to collaborate, skype is replacing some travel but rather than substitution there is an overall increase in communication [rebound effect] There is a transition, but to what is not quite certain. Not all in the organisations we studied were 'knowledge workers'.

Individual work, is not an individual choice?! People can be pushed into it. In the companies we looked at, firms might set up a local office. They discovered there was not much intra-organisational communication.

Intrinsic – some work was not 'virtual ready' – you can't 'manage' travel in isolation without unravelling it from work practices.

What was not in the background paper – corporate re-organisation, multiple office teams. Where are the people who are missing from their desks?

Futures – whose? Sector dependent again. An uneven transition (4 different sectors, again). Organisations and offices colonise new cities, the "office" is not necessary in "work". There is a relation to space and technology dependent on the intrinsic nature of work (practice).

Low utilisation rates show that work is not necessarily not in the office. Freed time is like 'supressed demand' (in transport)

Discussions and questions:

- People have multiple presences through technology (e.g. in meeting and working at the same time – in meetings and teleconferences)
- What is a meeting? Why is it like that? What is essential for it?

- How has travel embedded itself in business practices? And likewise into meetings as a "thing" – a social practice entity?
- GB- Management by walking about is an embodied practice.
- There is a status in being 'untethered', being able to roam the office (and beyond).
- Screen to screen, window to window, face to face ... what is there between screen and face to face? Window (in office) transparency again, view all optical metaphors.

Lisa Wood - Collaborative and agile work

As title says, about collaboration and agile, not offices!

Agility – spanning different disciplines, organisations, cultures etc. Business agility is management 'out of sight/site', monitoring and accountability. Agile is a discourse from the military too!, along with 'adaptable' and 'capable'.

Face to face and co-presence, there are compulsions to proximity. Video shown of firemen. A flipchart was used as a physical command post, where the team leader is standing. But controllable as focus doesn't work with wanting to be 'agile'.

App[lied?] Mobility – picking up work and moving it. This is mobile work (and social workers etc.), but not knowledge work necessarily, autonomy? What hierarchies are involved? Who is required to be still? Those who do not move.

Tele-medecine (e.g. diagnosis through the screen) - is being sold on its environmental benefits.

Discussion and questions:

• Eggers (2013) The Circle – novel. Future dystopia of transparent organisation, where everything is provided.

Luigina Ciolfi - Mobile work/life and technologies

Uses social science of human/technology interactions, looking at different worksites.

Agility = reconfiguring practices and tasks <u>to fit.</u> So technology doesn't make you better everywhere – it is fitted to situations.

Workers' decisions about mobility are social e.g. involve a team, trust, collaboration. Management view is that "you are flexible (you have tech) – GO!" The worker's view is that it is or should be a choice (autonomy), opportunity and obligation.

Workplaces are fluid (anywhere-ish) and the office is fluid (infected by other practices). Therefore, we should avoid abstracted accounts of mobility of working 'anytime, anywhere' – instead stick to situated accounts.

The Nomad project had 4 cases – they were not all 'elite', but they were all in the creative sector.

'Place-making' (expressive function of the organisation) applies to e.g. company furniture for home office of a sales rep.

- Blending (not reinforcing) work/life (and boundaries)
- Why go to the office to work? For hi-tech software, for files, to meet, and because the project is more than the individual.

- Solitary work/travel: focus on the customer at the end!
- You can rent an empty physical office with a phone at the end that passes on messages –
 kept for the area code! (the symbolic power of space)
- Work from home in order to be available 24 hours and represent the company
- Home office allows 'closing the door' privacy and focus.
- "Office" at home, is now called a home *office* (not a study any more), reconfiguring space, like "lounges" business lounges too, reflecting roles and responsibilities of 'work', and work/life balances and expectations.
- There is the possibility of positive 'hacking' of systems of connectivity for your own benefit (resistance to surveillance?)
- Change in nature of employment: Self-organisation, unpaid work, self-advertising, tax returns, online portals etc. replacing previous staffed services. (Neo-liberalisation?)

Discussion and questions

• Spatial changes in the provision of services/tethering of practices: Tethered processing and data moved to blanket provision, leading to a need for ways to escape (protected spaces)

Janine Morley - Connectivity, Wirelessness and Home

Office and home: the interactive technology in each influences each other and so do practices. Blend between technologies and specific work micro-practices. What 'work' takes place at home and where, not just in a "home office"? Specifically, there are other forms of work in homes and offices, many of which are IT-dependent, beyond working for paid positions, e.g. reviewing, blogging, or home admin.

When services are increasingly provided online, e.g. solicitors and accountants, there are changes to who comes to offices (e.g. customers), which has changed office work.

"Office" is therefore a construct and changes.

Connectivity and data intensification. There is internet in everything, 'on demand' (TV) lead us to wonder, what is the office equivalent? In particular are there common forms of work that are becoming increasingly data-intensive, and only possible with live and super-broadband connections? Video-conferencing is an obvious case.

Data accessibility. Geography of connectedness, some data-heavy work is not possible on phones or with less bandwidth. What will the 'internet of things' lead to? Monitoring of the office environment and employee health?

Extrapolate from the present? Follow trends? Imagine futures? This is not yet resolved. Grey literature portrays a particular type of vision and future. We should remember that 'representations of what changes, also change'

[Mobility of data and storage and work and materials]

There is work done to be mobile: planning, preparing kit etc. – Mobile work done BEFORE or WITHOUT technology...

Co-presence, past and present together too, in materialities.

Jan Bastiaans (Lancaster University Energy Manager) - The implications for future University offices and energy demand

There is a traditional view of 9-5 office. We have achieved energy efficiency in heating, a bit in electrical, but the number of devices is rising and undoing these advances. It is preferable to design in passivity rather than services, where possible. Design teams (in new build) then push back against this.

More individual control, flexibility of change in use. Open plan does NOT equal thermal comfort/control. More data is being collected. But it is not being translated into behaviour change.

GROWTH (e.g. of student numbers, of campus) is a very real issue and problem. It is anti-efficiency, rebound, numbers of buildings and users. Known as 'stuff and standby'.

EFFICIENCY – Old Management School buildings (1970s? 80s?) are 20% *more* efficient than Charles Carter (<10 years old)! Charles Carter has a BREEAM Excellent ('wallpaper') – an award winning green building! Design process is to over-engineer (for safety for redundancy, for peaks etc.), then cost it, then value engineer, but bring in cheaper and less efficient services, so the energy consumption always creeps up from design to use.

Space data – the university has c. 2,000 offices, at an average of 17m² per office.

UTILISATION: 2,300 staff (including mobile, non-office staff), means there is 14.9m² of office space/person [servicing the empty office!]

The 'holy grail' is "how spaces are being used, and how to use them properly"

CONTROL -more data collected, but for what purpose?

We need a commitment (political) to tackle energy efficiency in decision-making processes, tap into 'adaptive capacities' e.g., in comfort, and utilise space better.

Historical specificity of size of 'the university office': seminar sizes, tutorials in rooms, teaching etc., the practices of research and teaching and therefore how a University works...

Discussion and questions:

- CHOICE (of students, of staff) yes, it is the discourse driving everything.
- JF: Have we any evidence on what people want and do and expect?
- GB: All estate managers think the same view of e.g. open plan and hot-desk. Energy is not an issue, controlling and managing academics is!!

Last session: What would you want to know to research and think through the future of offices and office work? What sort of data etc.?

Each participant was asked to think of three things that were major conclusions or further questions from the workshop, which are recorded in note-form below:

- Place Futures of worktime.
- Services 24hrs.
- Futures of co-presence/mobility, futures of 'flexibility'
- Role of IT, and how it ripples out: data and storage.
- Knowledge about time, rhythms of worktime.

- Places, energy signatures of different places all used for work
- Focus on different work and sectors
- Metrics of space data
- Power relations who determines what we 'need'?
- Time and space ecologies of practice
- What is work?
- What data is being collected, by whom and for what?
- Services and spaces disentangle them?
- IT tech, what is being written into technologies, and into offices?
- Performances of hierarchies
- Managerialism, Rules, control,
- Interruptions, informal arrangements, hacking.
- Time/space
- No peasants in these narratives or futures
- Smart phones in India
- How and when energy use information will be communicated to users? Work and energy use.
- In future, individual or organisation leading change?
- How flexible can an organisation be?
- Individual/organisation corporate identity, office design.
- Domesticating the office, holidaying work. Blending...
- Diversity of work and of offices
- How much mobility is supplementing or substituting?
- Requirements different between sectors
- Interactions ...?
- How could this be communicated to decision-makers?
- Need to talk to the social sciences
- Data systems on campus [can we use them?] Experiment on campus!