



Knowledge Work Productivity

Thoughts on how to make improvements

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Introduction

The productivity of knowledge work is a major issue for Higher Education institutions (HEI). Much of the activity of an HEI is knowledge work and it's how most of the value is created.

This paper is one of the outputs from the 'Benefits-led IT' project, which took place at Newcastle University during 2009/11. For more information on the project see:

<http://research.ncl.ac.uk/transform>

In a recent workshop, we explored the need for greater focus on knowledge worker productivity with a range of organisations and identified some quick wins.

As a follow-up to the workshop, we've pulled together short pieces we wrote as blog posts in 2007-8 as a starting point for this report. We hope it is a useful contribution to collective thinking about improving our productivity as knowledge workers.

There are significant opportunities for every HEI. The good news is that it's possible to start small, and learn from initial experiments. Even better news is that you can make a difference with existing technology and existing resources.

Please get in touch if you'd like to help us develop these ideas or explore how they could help make a difference in your organization.

Note: we slip between 'we' and 'I' in a number of places to retain the personal viewpoint of some of the original blog posts.

Working Smarter – Improving the Effectiveness of Knowledge Work

Is there a problem?

It was about three years after I started work that I remember the first PC's. Do you remember all those strings of commands to get a Lotus 123 spreadsheet to print? It was a number of years before I had my own PC and then later my own laptop at work. I wonder what we used to do all day before the PC was ubiquitous? Now, most of us spend a large part of each day using a laptop or a desktop PC. I probably spend 35-40 hours a week using a PC. I know that isn't unusual.

What do we do during all those hours each week using the PC? Most of us use Outlook for email and spend a lot of time using Word, PowerPoint and Excel; I also use Visio, Project, and SharePoint as well as Internet Explorer and a range of other tools. I have constant access to the Internet. I don't use any 'line of business' applications, but to support my teaching and research I do make a lot of use of the Internet to access electronic libraries. These are the tools of my trade as a 'knowledge worker'.

In an important sense, we are all information or knowledge workers now. This PC and Internet technology has changed how we work dramatically. I happen to be writing this at home, but I'm keeping in touch with work using Outlook connected over the Internet. We are much more effective in many ways than we were before the PC. I think of my first week working at Microsoft, my line manager was able to follow up an email request from me and we had approval from the Director of our business group in Australia and the co-ordinating manager in Redmond within 24 hours. At quite a different level, I've noticed the impact of PowerPoint 2007 on my presentations. I need to use slides a lot in presentations and teaching – I like to try and use diagrams not just endless bullet points. The new Smart Art feature can probably save me 20 minutes or more a slide in preparation time and I was very competent with PowerPoint anyway. And it also has an impact on quality – it's challenging me to think in a different way about communication.

Peter Drucker argued strongly that improving the effectiveness of knowledge work is the greatest challenge for managers in the 21st century. He stressed that there is a need and an opportunity for the same sort of huge improvement that there was in the effectiveness of manufacturing in the 20th century. Have we met this challenge already with all these new tools?

No way! There have been enormous changes and improvements, but there is a huge amount more we can do to take advantage of the powerful tools we already have available to us. Also, the pace of innovation is accelerating – so there are many more opportunities to come.

Organizations have barely begun to tackle the challenge of improving the effectiveness of knowledge work. Some provide up to date PCs and the latest software, many do not. Very few provide adequate support and advice for users to realize the potential of all these powerful tools. Most of us, spending most of the working week using these tools, only know a fraction of their capabilities that would be valuable to us. The evidence from Microsoft that 80% of new features requested for Office are already in the product supports this. The IT function of an organization is usually happy as long as the technology

works, the Human Resources function may pay for some formal training. But no one really tackles how individuals, teams and departments can exploit the full potential of these tools to improve the effectiveness of information and knowledge workers.

In these brief notes we've started to explore the problem. We are very keen to work with other individuals and organizations who share our passion and determination to improve the effectiveness of knowledge work

Structure

Improving the effectiveness of knowledge work is a major opportunity for organizations of all sizes and in all sectors. We want to start to map out some of the broad areas that we need to tackle. Firstly, we want to make it clear that we are NOT talking about knowledge management (KM) - although we will need to consider KM at some point.

We need to explore the following areas:

The implications for **senior management**: there are issues of leadership, strategy, roles and culture that will contribute to making any significant improvement.

Implications for **operational management**: if there is going to be significant improvement, there will inevitably be an impact on operational management. For example, we will need to consider tactics and tools that they can employ to make a difference.

Implications for the **IT function**: there are also significant implications for the IT function that will affect both systems development and the operational / support roles of the function.

Implications for the **individual**: finally and most importantly, there are implications for the individual - both knowledge workers and managers of knowledge workers.

We will also consider our effectiveness as individuals, as members of teams and in contributing to business processes. In each of these areas, there are a number of important issues to consider and we will start to explore the issues and what we can do about them.

Senior management perspective: establishing a climate for improving knowledge worker productivity

So, what do we **do** about improving knowledge worker productivity? In our view, there is no single, right place to start. You certainly don't have to wait until this is a top priority for the CEO. There is plenty to do as an individual, team, department, and division. However, the top management perspective is important and there are a number of important areas to tackle that together can help create a climate for improving knowledge worker productivity.

Strategic context

When Peter Drucker set out the challenge of improving knowledge worker productivity in his 1999 article (Knowledge Worker Productivity: The Biggest Challenge, California Management Review Vol 41 No 2 Winter 1999) he also set out a number of factors that contribute to improving productivity. The first was to focus on 'determining the task': to be clear about how the knowledge worker contributes value to the organisation and then to really focus on this, eliminating what hampers the knowledge worker from concentrating on adding value. This is a challenge for each of us as individuals – have you tried tracking how you spend your time in the course of a week recently? It is also a challenge to top management to communicate the strategic context; the vision, the long-term goals and the immediate priorities that help each of us see our role and contribution as part of a bigger picture. If we remain in the dark about this bigger picture, how can we know where to focus? (See **Box 1** for a brief summary of the article by Peter Drucker).

Roles and structures

Consider your organisation:

- Who determines the level of investment to improve knowledge work productivity?
- Who has responsibility for realising the potential of a major investment in desktop infrastructure to improve organisational performance?
- Who is responsible for knowledge work productivity?

Typical answers which include: "the IT function", "the management team", "HR provide some training in Word and Outlook" and "what do you mean?" are all inadequate.

A particular challenge is that all the support functions in the organisation (HR, IT, facilities / property) have a crucial role to play. Consider a few examples: do the HR provided education programmes for *improving personal effectiveness* and *leadership development* address making use of desktop tools, for example to manage time and to enable effective virtual working? Are IT investments in wireless networks linked with changes to meeting rooms to provide electrical power, projectors, smart boards and printers in meeting rooms? Is there still a separate video conferencing suite or are people learning to make use of desktop conferencing capabilities and to make video conferencing an option at any meeting? Does property strategy reflect the increasing trend for flexible and mobile working and provide office space for collaborative, informal working and for highly interactive team working when people are together in the office?

There is no single answer in terms of roles and structures. In most organisations there is a need for much better co-ordination and for effective teamwork across the different support functions. A key step top management need to take is to review overall roles and responsibilities and establish a framework that addresses the area of knowledge worker productivity. This will almost certainly include IT, HR and facilities / property. In most, if not all organisations, some level of change will be required to address the overall opportunity.

Knowledge Worker Productivity: The Biggest Challenge by Peter Drucker

California Management Review Vol 41 No 2 Winter 1999

The unique contribution of management in the 20th century was the fifty-fold increase in the productivity of *manual workers* and proposes that “the most important contribution management needs to make in the 21st century is to similarly increase the productivity of *knowledge work* and *knowledge workers*. The most valuable asset of the 21st century institution will be its *knowledge workers*.”

Drucker goes on to outline six factors that determine knowledge worker productivity:

1. Determining the task - how the knowledge worker contributes. Understanding what hampers the knowledge worker from concentrating on the task and eliminating it.
2. Imposing responsibility on the knowledge workers themselves for their productivity. They *have* to manage themselves. They *have* to have autonomy.
3. Continuous innovation has to be part of the work and the responsibility of knowledge workers.
4. Knowledge work requires continuous learning and continuous teaching by the knowledge worker.
5. Productivity of knowledge work is not, at least not primarily, a matter of *quantity*. *Quality* is at least as important.
6. Knowledge workers should be treated as an *asset* rather than a cost. Knowledge workers need to want to work for the organization, attracting and retaining the best knowledge workers is a key role for management.

Box 1

Leadership: getting the climate right.

Talent management and creating a 'great place to work' is a focus in many organisations. Empowering people (to work successfully and effectively) is increasingly seen as important. Looking at some corporate missions statements supports this: "Credit Suisse will *empower people* to work openly and respectfully with each other and with clients to deliver superior results that will lead to success and prosperity for all its stakeholders"; "Starbucks: Provide a *great work environment* and treat each other with respect and dignity". Even Dilbert gets in on the act "Our mission is to continue to interactively network high-payoff catalysts for change so that we may continually maintain cutting edge services while *promoting personal employee growth*".

Dilbert, with his mission statement generator drawing on the latest buzzwords, does make the point that there is a need to be cautious about mission statements and their link with the reality of management priorities and actions. This brings us back to Peter Drucker. Another of his factors that determine knowledge worker productivity is that knowledge workers should be treated as an *asset* rather than a cost: knowledge workers need to want to work for the organization, and attracting and retaining the best knowledge workers is a key role for management. The challenge is to provide the leadership and the organisational climate where we don't just acknowledge the importance of this but we do something about it. Many organisations certainly are tackling this – the focus on talent is increasingly widespread. The thing that still, very often, seems to be missing is a co-ordinated emphasis on people, information, process, technology and place – the wide range of factors that together contribute to knowledge work productivity. Who is going to provide the vision and the leadership in your organisation?

So, for top management there are likely to be issues of communication, roles and responsibilities and leadership. A key starting point is probably to take a strategic view and consider how and where knowledge work contributes to value creation in your organisation.

Education and support: enabling continuous improvement in knowledge worker productivity

An informal survey...

It certainly doesn't count as 'research', but for a number of years I've asked as many IT managers as I can how their organisations help knowledge workers understand how to exploit Microsoft Office and other tools to improve their productivity. My 'sample' has included all sorts of organisations including some large global organisations. There are typically two parts to the answer:

- "We have a help desk that they can contact if there is a problem. The helpdesk also uses the intranet to provide some self help and learning material."
- "We provide a range of classroom based courses on key applications."

This is ok as a start but doesn't go nearly far enough to really enable productivity.

Update based on our workshop on 17 Sept 2010

We shared evidence from a recent survey of a wide variety of managers and knowledge workers (part-time MBA students across all our executive MBA programmes). We found that knowledge workers spend around 20 hours a week using elements of Microsoft Office and another 10-20 hours a week using email. While this is self-reported and possibly not totally accurate, it is line with our experience. Evidence from much more in-depth studies, for example by Microsoft, supports our indicative results.

Participants at the workshop from legal firms also shared some examples of good practice including extensive use of templates, and training and support related to key aspects of PC usage – particularly Word.

The help desk is really there to resolve problems – also long as the PC is secure, and working their job is done. Normally, the helpdesk staff will not be experts in using the Office applications and may have limited experience of some of the activities people are using them for. In practice we 'don't know what we don't know' and don't ask for help. We have probably also learnt not to bother them based on past experience – that's not to do with the quality and helpfulness of the help desk, it just the service hasn't been designed to address our challenge of improving knowledge worker productivity.

Also most staff, and certainly most senior managers and knowledge workers, don't attend courses on Word (or any other software applications), so we are left with the original problem that most of us are not using important aspects of functionality that could make a real difference to our productivity.

Designing education and support to improve productivity.

We need to design education and support services to improve the productivity of knowledge workers. A key starting point is that we need to do more than virtually all organisations do today and we need to approach the problem in a different way. Starting assumptions must be that formal, classroom based courses are only a small part of the answer. We need to tackle the huge issue of ‘we don’t know what we don’t know’, which means that we don’t ask for help because we do not know that there is a better way.

The organisational climate or culture is important. We’ve already explored issues related to senior management and will consider operational management later on. These roles are key in getting the climate right – for example setting an expectation that there is *always a better way* and as Drucker suggests: ‘continuous innovation has to be part of the work and the responsibility of knowledge workers’.

A further key assumption that informs our approach is that there is a need for an ongoing process of learning. This is not about a one-off activity. There may be some bursts of energy around releases of new and upgraded products but this is essentially an ongoing process. These are ‘intellectual’ technologies that have properties that are not fixed on implementation but can be innovated endlessly, depending on the interaction with the intellect of the human beings who implement and use them. As we learn more, we start to see new possibilities and become equipped for a further cycle of learning.

We also need to recognise that much of what we learn in the workplace comes from colleagues through our network of day-to-day contacts.

There is a counter-argument that these technologies are now too powerful and that innovation has overshot our needs and ability to use them. Our considered response to this is “rubbish!” The problem is actually that organisations have been slow to learn how to seize the opportunities – the potential benefits for those that find a way are significant. Don’t forget we are not just talking about productivity improvements of a few %. Well researched studies of the productivity of IS development teams (a special case of knowledge work) suggest there is a difference of 10:1 (yes 10 x) between the best and the worst. We expect to find large differences in productivity in other scenarios too.

Outlining a new design

If we redesign education and support services based on these assumptions, or principles and the overall objective of improving knowledge worker productivity where do we end up?

We want to emphasise two things. Firstly that there is no single right answer and secondly that there are potentially significant implications for both the IT function and for business units.

Enabling continuous improvement in knowledge worker productivity

One response is of course to make more use of technology to help us. This is a natural area for “eLearning” as there are significant opportunities for breaking the learning down into small chunks and enabling ongoing and ‘just in time learning’. Of course, many vendors and organisations have made significant investments in this area and it’s a great *part* of a wider solution.

I’ve been going through this learning process myself in the last few days. I’m going to really emphasise ‘technology enabled learning’ in 2007/8 and I’m starting to get to grips

with podcasting. I spent a couple of hours this week playing around with PowerPoint and a microphone and webcam starting to see what worked and what didn't and how I could quickly create a short audio-visual presentation. Basic stuff I know. I've known that the functionality has been there for years, but I've never tried using it before. I know one other person in the School has used it – but he was on holiday. I'm fairly sure our IT team have not used this and I certainly didn't want to do a School-wide email to try and find out if anyone else had more experience than me. Anyway – it was fun and I did make some good progress after a few hours of trial and error.

Enhancing existing, informal support arrangements within business units

Education in the use of technology is most effective if closely related to the work context and the effective exploitation of technology is significantly influenced by support from the users peer group. Our first area of focus is to build on and enhance the effectiveness of the existing ad hoc and informal arrangements. Again, we're getting support from Drucker: 'knowledge work requires continuous learning and continuous teaching by the knowledge worker'.

So, areas to consider include:

- *Formal activities.* Education for new workers or on the introduction of new technology should be related to the work context as should help and guidance material. The evolution of portal and eLearning technologies provide a number of opportunities, for example training and other guidance and support resources can be linked to directly from guidance / documentation on business processes. There is also the opportunity to make this user owned.
- *Peer group and community support.* It is important to recognise, encourage and facilitate peer group and community support. Specific steps could include reward and recognition for local experts and recognising these existing informal roles in more formal team role descriptions and performance measures. Provide enhanced training and support for these local experts. Also, establish and facilitate a community (or communities) that can bring these people together and enable them to learn from each other.
- *Local / informal / community support arrangements* should be encouraged by the 'formal' IT support teams and arrangements. This is key area where end user innovation and skills need to be encouraged.

Key context has to be that 'improving how the job is done' is part of the job at every level of the organization.

The support arrangements should shift from a 'reactive' to a 'proactive' approach and exploit a wide variety of techniques including 'brown bags' and 'tips of the day' raising awareness of what is possible. They need to address a variety of areas for example:

- How best to use the basic functionality of the software.
- Good practices: for example around the use of email and instant messaging to communicate effectively, maintain trust and good relationships, and avoid 'information overload'.
- Reuse for example of templates improving both efficiency and perceived quality.
- Development, management and reuse of local solutions exploiting Office and other infrastructure products.

It is vital to take a benefits-driven approach and remember that this is not just about the technology. The starting point is improving working practices, for example by considering 'Knowledge Worker Productivity: The Biggest Challenge, California Management Review Vol 41 No 2 Winter 1999 how can we, as a team, exploit these tools to help us work more effectively to achieve our goals?'

The Knowledge Worker Support Centre

The role of support arrangements provided by the IT function is also critical. Organisations have taken many approaches to providing users of desktop technologies with support. Many went through a period of investment in an Information Centre, which was heavily involved in support and in developing systems for end users. More recently cost cutting within IT has found support teams an easy target and organisations have restricted the scope of support to providing a technical service to ensure that PCs continue to function and handling specific technical problems.

A service is required to provide support for knowledge workers that addresses the *use* of technology to increase the effectiveness of end user performance. It should not be restricted to purely technical issues.

A key decision for an IT function is what balance they should strike between providing the service and facilitating the local services and arrangements within the business areas. The IT support arrangements need to work closely with the support arrangements in business area already outlined and in particular need to facilitate the more informal arrangements.

Overall, we envisage a 3-tier support model:

Tier 1 support is provided by the local informal support arrangements. This may also include more extended support through the local communities.

Tier 2 support is provided by the central knowledge worker support team(s). This service using email, telephone and web aims to help the users exploit the available technology to improve their performance and productivity. It should start from the perspective of "how do I do task x?" not just how a specific product works.

Tier 3 support addresses more advanced technical issues and also services to support end user systems needs, for example a requirement for a sophisticated spreadsheet.

The opportunities for shared learning, good practices and reusable resources are significant. This certainly seems a key opportunity for the IT function; through brown bag sessions; showcases; on-line forums etc.

Making it happen

A great thing about this is that it is not 'all or nothing'. It is an ideal scenario for making incremental improvements and learning as you go. Who is going to be the champion and visionary in your organisation?

Getting the foundations in place: using just a little bit more of Word to improve productivity.

I said I was going to talk about some specific examples of what we can do to improve knowledge worker productivity. So here goes – I'm going to start with **Word**.

At the Business School, we produce a lot of long documents and we ask our students to do the same. Last week I was leading an MBA module on Information Systems Strategy with a group of 20 part-time students. A great group – mainly in middle and senior management roles, in a wide range of organisations. As part of the module, we spent some time exploring knowledge worker productivity.

We quickly agreed that we could find an element of knowledge work in virtually every job.

Then, to start a debate and explore the topic a little further I did a little demonstration. They are just about to start their dissertations, which will involve them producing a 15,000 word report. So, I showed a couple of features of Word related to long documents. I showed:

- How to use **Styles** to format a document consistently.
- How once you've used Styles, you can use **Table of Contents** to keep track of page numbers automatically.
- How **Document Map** enables simple navigation through a document using the various headings set through Styles.

These features were certainly in Word 2003 and have probably been around for much longer. I remember the equivalent of Styles in WordPerfect about 15 years ago.

Now remember this is a bright, fairly computer literate group of managers. About half knew about these features. One or two more knew they existed but hadn't found out how to use them. I claimed, with some justification I think, that ability to use these features would make quite a difference to their productivity as they produced their dissertations.

This sparked off a very lively debate and we returned to the theme I've raised before: what do you do when: "you don't know what you don't know"! We also raised the second tricky issue we need to deal with "you do know (a feature exists) but you don't know how to make it work".

Tackling "you don't know what you don't know"

Even the IT managers in the group agreed that IT departments are not much help in this situation. And of course as "you don't know what you don't know", you are unlikely to ask for help anyway.

The answers we came up with included the following:

"Brown Bags" – this was something we used to do at Microsoft. Someone from the team / organisation takes time to learn about a topic and then over a sandwich lunch provided by the organisation shares what they have learnt. A few organisations were doing this

anyway as part of a general emphasis on learning but had not thought about including using these Office tools.

Finding the experts within the organisation. We decided that each manager could quickly find out if any of their teams had more advanced knowledge of any of the Office products. These individuals could then take on the responsibility of helping others work out how use these tools to do their day to day work more effectively. They don't need to be world experts – just to know a little more than some others.

Finding an external trainer. We did not want to rush into standard course but felt if we could find the right expert / trainer we could get some very simple training and guides in place directly related to the tasks people undertake each day.

At least we left the session keen to learn more.

Please do share your thoughts on what else we could do to tackle the challenge of “we don't know what we don't know”

See Appendix 1 for further information on ‘we don't know what we don't know’ and other scenarios.

We do know what we don't know – but...

exploring a few more features

As part of the same session, I also showed the great Smart Art feature in PowerPoint 2007. It is fairly mind blowing. Talk about productivity. I reckon it can cut creating a good-looking diagram down from 20-30 mins to 2 or 3 mins – a factor of 10. So, that's certainly a good start. Perhaps we can no longer say that Office 2007 is still fairly new, but only a few had seen that one.

We also had a quick look at the option of plugging a second screen into a laptop and using two screens for different applications. I have an article that claims this makes you 50% more productive – I don't believe that, but it is very, very helpful. I think only 2 or 3 people had seen that. I sometimes think I should tell more of my colleagues sitting with their laptop plugged into a docking station, laptop screen closed; only using the separate monitor, that they are missing something. But then if we all knew about using two screens I'd have to find some other way to work more quickly than they do.

Perhaps that is part of the problem. Knowledge is power I suppose.

I did ask our IT department to tell everyone a year or two ago about the laptop and extra screen, but I don't think they've got round to it yet.

My point is simply that there are a lot of simple things each of us can do to improve our own productivity. If you lead a team, you can also create the opportunity for your team to work more productively.

Tackling: “we do know what we don’t know - but we don’t know how to make it work”

The challenges with: “we do know what we don’t know - but we don’t know how to make it work” are not so different from what we saw when we considered “we don’t know what we don’t know”. There are some other factors to consider though.

So why don’t we learn? Well most of us are busy – very busy. There never seems to be time. We know it can take time to learn something new, perhaps a long time. We also know we might try to find out how to do it and fail. What then? We’ve still got the work to do and we’ve got even less time to do it. It’s too risky – we don’t fancy explaining how we failed to make a deadline because we wanted to try a new and better way of doing things. So we carry on – we get it done – just as we always have. There may be a better way – but our way works.

I think we are also naturally conservative. I went to lunch with a friend today and we both admitted that we tend to go to the same restaurant and have the same choice from the menu – we know we like it and we play safe.

So, what are we going to do this time? At least we know we’ve got a problem so that’s a start.

I’m assuming we’re not going to go on a course – we’re probably far too busy for that. In any case, we need help *now* with this *specific* problem. I’m also assuming we don’t use Help or all that helpful information on the Office web site – we could always try of course. But I have to admit, however hard Microsoft try, it does not seem to be telling me quite what I need to know when there is something tricky I want to understand.

Suggestions:

Ask for help! If we don’t like to ask for directions, we’re certainly not going to ask someone to show us how to use a PC. Go on – you know it makes sense. You could even lead by example as a manager.

Ask an expert: we could call on one of those people we’ve just identified as experts in the particular packages – perhaps they can show us. That seems to be the best way to learn – get someone to show you exactly how it’s done.

Watch a demo video: Then if we have identified some key features that make a key contribution to day-to-day activities maybe we can get a few quick demos captured – ‘screen cams’ of how to use key features in the context of common tasks.

Create a plan and clear targets: if we have any influence over such things, we can try and get goals set for our team so that there is a clear plan to build up skills in key Office applications as part of a wider focus on improving effectiveness. We can also plan in a few advanced courses and make time for those attending to gradually share their knowledge.

What else have we missed?

Meetings ?????? meetings: how do we improve the productivity of meetings?

John Cleese showed us how to improve the productivity of meetings in his videos. It feels like that was 20 years ago. (According to the link I found on Google it was actually made in 1976)

Have things got any better? As I explored knowledge work productivity with my MBA group it seemed that little has changed. People turn up late, key people aren't there, no one is quite sure why there is a meeting - but we always meet on a Monday, the objectives and agenda are not clear, no one has read the papers until they arrive at the meeting, actions aren't issued for days, no one does anything until just before the next meeting anyway.

I think we all recognise the problems. At least these days you can take your PC along and do your email while you look like you're taking notes.

In our discussion in class, we quickly identified that many of the actions we should take first to improve the productivity of meetings are nothing to do with technology at all. Ensure there is an agenda for example.

Then we went on and explored some of the many things we can do to use Office to improve the productivity of meetings:

- Book them through Outlook Calendar and not email so that they are actually in everyone's diary.
- Use Office Communicator to catch people at their desk for quick questions for what might otherwise turn into a 1:1 meeting
- Use LiveMeeting to avoid the need to for travel.
- Use SharePoint Meeting spaces so that all the latest information for a meeting is always there, up to date, in one place so we are not searching through emails trying to find the right documents.
- Document the actions there and then in the meeting and keep the action list visible through a projector so it is very clear what commitments are being made.
- Make roles in the meeting clear and have someone designated to document the actions and other relevant points of the discussion – during the meeting on a PC. Handwritten notes written up later are out.
- If it's a creative meeting, use OneNote, or another application, to capture any diagrams and notes made on whiteboard or flipcharts so that these notes can also be circulated instantly at the end of the meeting. Or set up a shared notebook. Or use OneNote and a projector instead of the flipchart in the first place. Or simply use a camera to capture pictures of any flip charts and whiteboards used – perhaps that's good enough as an initial output.

It's all fairly straightforward – let's just do it. You might not have all these technologies available. You might still be struggling to get electric power and projectors into meeting rooms. But we have to start somewhere.

Some of you will be well along the path to effective meetings. You need to consider what you can do next, and what you can share with the rest of us about how to make improvements.

What else can we do to improve the productivity of our meetings?

What else can we do to improve our productivity when working together in groups and teams?

Box 2 provides a bigger picture perspective on realizing value from IT

Bigger Picture: sources of value from IT

IT is used in four different ways to enable value for the business:

Automating: Automation of routine jobs and the substitution of computers for people

Embedding: for example the system taking decisions on mortgage applications.

Communicating: Providing enhanced information sharing capabilities for example through email and Instant Messaging (IM)

Informating: Supporting human capabilities with improved facilities for the collection, analysis and presentation of information.

As technology has matured the main sources of value are continuing to change. Big impacts in the future are going to continue to be from Communicating and Informating.

Shosana Zuboff writing over a decade ago in *Informatize the Enterprise: An Agenda for the Twenty-First Century*, argued that to take advantage of twenty-first century technology we need to develop the twenty-first century organisation and make a clearer break from the forms of management inherited from the nineteenth century.

She gives a great example of introducing new technology into a pulp / paper processing plant. What was originally envisaged as an automation project – replacing people with computers, actually had to become an informating project to get the value. The workers had to be more highly skilled to take advantage of the new technology and get the target business results.

Zuboff identified three main characteristics of the new paradigm of the *informed* organisation:

Intellectual skills development: conceptualisation, analysis etc to be able to realise the potential from new information and communication technology.

Post hierarchical roles and relationships: information and responsibility is more widely shared and roles are more interdependent.

Structures that foster a learning environment.

The article ends with a quote from one of the pulp workers: 'If you don't let people grow and develop and make decisions, it's a waste of human life – a waste of human potential. If you do not use your knowledge and skill, it's a waste of life. Using the technology to its full potential means using human beings to their full potential'.

Box 2

Increasing the productivity of individuals and groups

We've looked at some of the challenges and opportunities of improving the productivity of knowledge. It's great that we can make a start today. We don't need to wait for anyone else. We can work on this as individuals. We can also take a lead in our teams. Of course, you need to find the right place to start for your team but there are almost certainly big opportunities to use the tools you already have to work more productively.

Let me just share some of the things we've tried in the Business School.

Good practices

A single slide to summarise good practice in an area that is of broad interest. It doesn't tell you *how* to do it but it tells you *who* knows how. It also refers to related good practices.

Long documents: efficient editing and formatting



We produce a huge number of long documents across the School. Module and Programme handbooks are just one example. Updating and editing is a time consuming task

Many existing documents have been formatted manually using Font settings (bold / italics / size etc). Any formatting changes need to be repeated throughout the document and a Table of Contents needs to be prepared and updated manually.

Use STYLES to format a document. Set up a *template* so that the document has only the styles you need. To apply formatting choose the relevant style. To change formatting throughout the document change the style. If section *numbering* is required do this through the styles Use the *table of contents* feature to keep page numbers up to date.

Use the *document map* to navigate around the document.



More information

Templates

See: - [link to intranet](#)

People

Our experts – names not included

Related good practices

- Collaborative development of documents
- Reviewing documents
- Captions
- References
- Managing styles
- Paragraph numbering

Case studies

We have also tried one-slide case studies. These are intended to deal with bigger opportunities – perhaps of approaching activities in quite a different way. Again, they are just intended to raise awareness so anyone interested can get further information.

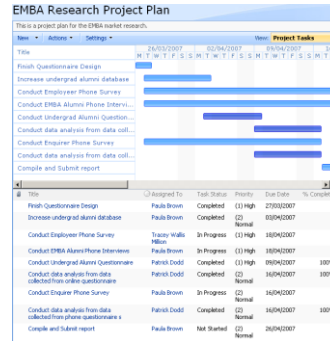
Agile Projects: rapidly establish a project plan and workspace for a small project team

The opportunity

- Rapidly set up a share workspace and collaborate on:
 - Actions
 - Project plan
 - Resolving issues
- Work as a team on documents and always have the latest version of documents available

The solution

- Set up a SharePoint team site for the plan and action list
- Use Groove for shared documents and discussions



“Using Groove and SharePoint has allowed the marketing and alumni departments to collaborate much more productively as a team to ultimately increase the schools’ student recruitment. We found the technologies both easy to use and highly productive.”
 - XXXX, Market Intelligence Co-Coordinator

For more information

- See: – person
 - Look at these resources:
- Related stories:



Hints and tips

Finally, and perhaps more traditionally, we have tried Hints and Tips that just give a quick introduction to valuable features that people might not be aware of and that relate to work we do day to day.

Tip 7 To quickly insert a frequently used piece of text
 Type and format the piece of text that you want to be able to insert quickly. Select it and then go to the Tools menu, select AutoCorrect Options, click on the AutoText tab, and then on the Add button. Now, in any document, as you start typing the piece of text, a tip will appear above the text and when you press Return, the text will be inserted.

Appendix 2 provides a brief overview of different contributions IT can make to improving the productivity of individuals and groups.

Overcoming the ‘knowing - doing’ gap: how do we make a difference?

We’ve looked at a number of examples of the opportunities for improving the productivity of individual knowledge workers and teams of knowledge workers. We suspect you might have been thinking that a lot of this is obvious – common sense.

So why isn’t it common practice?

Why is there this big gap between what we **know** and what we **do**?

We think the answer is that it does not get enough attention. No one owns the problem. Perhaps we don’t even recognise that there is a problem. We do not really notice that we spend 20-30 or more hours a week using some form of PC and as long as it works, and is reasonably up to date, we don’t give much attention to finding better ways of working.

I think that in this case ‘seeing is believing’ and that one way to make an impact is to do a short demonstration or to get one done – it’s not that difficult to get busy people thinking “if only I’d known how to do that” and wondering how many hours they could have saved. I think my simple demonstrations had that effect.

There is also a great opportunity to lead by example – by asking for help, by sharing what you’ve learnt and by setting improvement goals for the department and for each individual.

Three other ideas that might help...

Linking with time management training and personal development

Improvement initiatives are often too fragmented. Let’s see if we can take a more holistic, more co-ordinated approach. Let’s link improving our productivity as knowledge workers through using IS/IT more effectively with wider personal development activities.

A key element of individual productivity is focusing on the right tasks. At this level organisations might choose to address personal excellence or personal effectiveness and for example provide time management training that has an emphasis on deciding priorities and what to do, not just how to manage lots of tasks more effectively. This then provides a context for training in the use of related technologies.

We can then link this with ideas of how to use Outlook, OneNote and SharePoint to help. In some organisations, it might even be right to look at Project as well. One of the problems is that there are so many options – but we don’t need to find the best way – just a way that works better for us and for our team.

Coaching individuals and groups

In addition to online and formal 'classroom' training a trainer or 'coach' can have a major impact, working closely with individuals and groups helping them to understand how best to exploit the new technology to address their specific work situation. The coach can provide advice and guidance over an extended period and help enable continuous learning and exploitation.

Again, there is an opportunity to take a holistic view. The coach could focus purely on the use of IS/IT or could look more broadly at personal effectiveness. We could even help some of the experts we've already identified internally to develop into this coaching role.

Getting Working Smarter on the agenda

Tie the idea of Working Smarter into a wider improvement initiative that links in with the strategic goals in your organisation – perhaps related to better customer service. Alternatively, if that's too hard stick with Working Smarter as a local initiative and see what can be done – link it with the annual planning process for the team and with individual performance / development planning.

Making a start

There are many starting points for improving knowledge worker productivity. Why not:

1. Make a start with your team – using some of the suggestions in this paper.
2. Tackle the issue next time you set up a project team – how is the team going to work more effectively?
3. Include improving productivity as a key objective in the next planning round for your department.
4. Run a workshop exploring the issue with key colleagues. Ensure you include one or two demonstrations of features that would really make a difference.
5. Review the role and contribution of the IT function: how does it affect priorities and the services provided.

Moving on: Alison Kidd, in the classic article 'The Marks are on the Knowledge Worker' challenges many of our pre-conceptions about the design of IT systems for knowledge workers (**Appendix 3**). There is much more to say about this fascinating and hugely important topic.

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Appendices

1) Overcoming the Barriers to Change

There are significant barriers facing knowledge workers in tackling new areas of functionality in Office and other products. The matrix helps identify a number of different scenarios:

Identifying Priorities & Overcoming Barriers

	What do we know?	What do we not know?
What do we know?	<p>We know it – and we can find it (and use it)</p> <p>???</p>	<p>We know we don't know it – identified areas of ignorance</p> <p>Is it worth the effort trying to use a new feature – what if I fail and waste a lot of time / will it give me a payback</p>
What do we not know?	<p>We've got it, where is it?</p> <p>It was on the course – where are the notes I took?</p> <p>How much can you take in at once?</p>	<p>?</p> <p>We don't know what we don't know – we're in the dark!</p> <p>The other 80% of features</p>

1. *What we know:* We tend to stick to this element of functionality that we know and use regularly. This 10-20% of functionality is often quite different even for people doing very much the same tasks. The challenge is to increase this area so that what we know and confidently use is more than the current 10 or 20%, so that we can make the most of the available technology to work effectively.
2. *We know what we don't know:* there is some functionality that we know would be relevant to what we're trying to do. But is it worth the risk – will we succeed if we invest time in learning and will the payback be great enough? A key opportunity here is to make help available so that the chance of succeeding in learning something new quickly is significantly increased. This will kick-off a virtuous circle as next time the mental cost-benefit calculation will look more positive. A key question for the knowledge worker is "How can I get help so I ensure I succeed?"
3. *We don't know what we know.* This clearly applies at the organisational level where knowledge can be hidden away in large or small organisations. At the level of knowledge worker productivity, it also applies at the level of the team and the individual. Within a team, there will be a wide range of knowledge of the various Office products – but *who*

knows *how* to do a particular task? Will the person who has the knowledge have the time to share it? Where do you get help? At the level of the individual, knowledge can also be lost - "I was on the course but I've lost the materials and can't remember the details anyway"

4. *We don't know what we don't know.* This is the other 80-90% of the functionality that we don't use. In fact there would be a lot of benefit from using another 10-20-30-40% of the functionality. We need to know where we can get the greatest value for the task we need to accomplish.

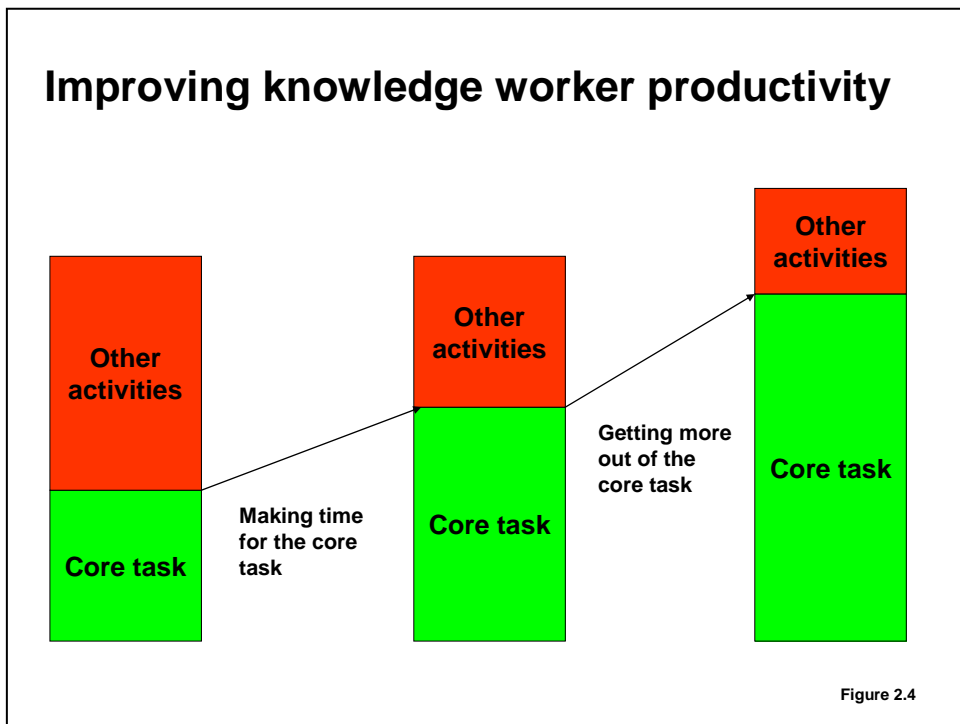
The issues and barriers to exploitation differ. There have been huge efforts to improve the ease of use of Office and Windows, with recent releases having had particular attention in this area. By itself, however this is not enough. Making the products easier to learn and use is extremely important but to realise the potential benefits action is also required in other areas, as identified in this paper. Specific actions to address the barriers identified include:

- Make help easier to find. Increase the likelihood of succeeding with an attempt to learn something new, for example by linking training and support resources more clearly to business activities.
- Develop peer-to-peer support arrangements to help users discover what they don't know.
- Set the tone from the top – it is not cool to be a technophobe or to use only 10% of the functionality. Is it cool to be ineffective?
- Culture – understand and address potential barriers to improvements.
- Metrics – focus on the likely impact of metrics and performance management and individual and team behaviour.

2) Improving the Productivity of Individuals and Groups

There are three broad areas where IS can be used to help improve the productivity of knowledge workers in the context of business processes: 'non-value adding tasks – stuff that distracts from the real job; general activities common to many knowledge workers; specialist tasks that are specific to the particular type of knowledge work. Realising value in each of these areas brings different challenges for the organisation.

'Non value adding' tasks.



Opportunities for exploiting IT to increase productivity

'Non value adding tasks' are any activities outside the core 'task' of the knowledge worker. IS is used to eliminate or automate these activities. Many organisations have put a lot of effort into this area, for example with online expense claims, purchasing, travel booking and HR administration. Microsoft for example, eliminated all paper forms. What would be the value of switching from spending 30% of time on the 'core task' and 70% of time on other things ('admin') to 70% of time on the core task?

Many organisations have made a lot of progress in this area. There are many opportunities for a wide range of solutions, both standalone and integrated with core systems. Examples include finance, payroll and human resources. The concept of an 'employee portal' provides a way of bringing many of these solutions into an easy to use intranet format.

Although many organisations have made good progress, many still have a long way to go...

Specialist support for the core task.

There is often an opportunity to develop and use specialist IS/IT solutions that automate, or in other ways improve, the productivity of the knowledge worker in relation to the 'core task'. For example, engineers might use Computer Aided Design tools. These solutions will often relate to a specific area of expertise.

This is another area where there has been a lot of progress and is well supported in many organisations. The falling costs of IS/IT, particularly hardware, are making it possible to make these solutions available to wider groups of users.

A particular challenge for organisations is to learn to deliver solutions to meet the needs of knowledge workers. This can often helpfully be seen as improving working practices rather than re-engineering processes. IS/IT can provide new tools and the knowledge worker retains discretion over how to use them.

General support for the core task

There are opportunities to make better use of general IS/IT solutions to help improve productivity. Many knowledge workers spend large amounts of the working week using software such as Outlook, Excel, Word and search tools such as Google. The challenge is often to help them to get the most out of investments that have already been made. Some of the greatest benefits come from enabling people to communicate and collaborate.

Most organisations have deployed PC's, email, and Internet access, Microsoft Office and provide some kind of formal training. Typically, there are three main areas where more effort is required:

- Developing a secure, robust infrastructure to support mobile working – for example with Tablet PC's, wireless networks and broadband access.
- Learning how to exploit new tools, often web-based that enhance productivity.
- Providing a much broader range of training and support for workers to help them exploit the capabilities provided by IS/IT and realise the potential benefits.

3) The Marks are on the Knowledge Worker

Alison Kidd

1994: Human Factors in Computing – CHI 94 conference

A few notes from an interesting article that helps us think differently about IT for knowledge workers:

The core of the argument is that the importance of knowledge is in the process of informing and changing the knowledge worker. We should explore the value of technology in enabling the *act of knowing* rather than seeing it as a repository of knowledge.

There are a range of insights, which appear of considerable importance to the current study:

Knowledge workers are able to function without much written information; often all they need is a notebook.

Knowledge workers cannot classify information until they have been informed by it and at that point, it is not needed. This links with the piles of papers often found on the desk or in the room of a knowledge worker. If the information is forced into a database, it becomes hard to find because it is not clear how to classify it.

When knowledge workers are informed they act differently and more effectively.

Knowledge workers are often interrupted e.g. by phone calls. The pattern of marks on the paper (the piles on the desk, the notebook) is important. It provides a context to help the worker get back to where they were before the interruption.

IT can be used like physical space to help with presentation and to enable people to be more effective, they are the primary computing device.

Knowledge workers need flexible IT that can be used to provide diverse outputs – like a word processor.

It's the act of taking notes itself that is important - the ability to look at the ideas and move them around. Often the notes taken are not used. The visual record is important. It is generative, part of the thinking / creative process.