

FlexWork Blueprint No. 001

(Issue v.01 – 11/7/01)

The Distributed Product Promotion Team

A group of SMEs combining skills and opportunities for business benefit.

This is one of a series of 'blueprints' designed to illustrate models of flexible working. It is designed for use by business advisors as a resource when providing assistance to SMEs who are investigating flexible working for their business, or whose business development might benefit from consideration of flexible working.

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1. Overview

This blueprint provides a general consideration of distributed teamwork involving multiple small-to-medium sized enterprises (SMEs). It examines and exposes salient features for the general case of distributed working where team members are from different organisations. It does so by illustrating a generic case derived from observation of an actual case to which features of related cases have been added to expose a larger set of issues of interest. The names and geographical locations are therefore changed but reflect the sources accurately.

2. Rationale and Target Audience

Distributed working is increasing not only within companies, but also between companies who collaborate on joint ventures. This blueprint provides a basis for deployment of distributed collaborative working that can be applied in either case. It is applicable to any SMEs who either have workers in multiple locations (within company) or who are collaborating, or seek to collaborate, with other SMEs to exploit business opportunities requiring a larger mass of personnel, knowledge and skills than can be offered from a single site or single company. The potential benefits for a company are numerous and include:

- Avoiding movement of people to temporary work locations.
- Allowing people to work on several projects from a single location.
- Opening business opportunities to exploit current skills and competence in projects where only part of the total required competence is available within the company.
- Allowing companies to embark on new business ventures to test future opportunity prior to expansion ('operate first' using external support before developing new internal support when idea proven).
- Allowing companies to exploit work opportunities focused on distant regions without investing in regional offices.

All of the above benefits allow expansion of commercial potential (increased revenue) without any of the drawbacks of investment risk and operational complexity. The model can be applied in any region because the operational capability, as will be seen, relies only on having a good telecommunications infrastructure.

3. FlexWork Usage Description

The 'typical usage scenario' for this blueprint arises from an activity whereby a group of companies previously collaborated on the production of a new type of 'document management system' integrating scanned documents, digital documents, and web-based information sources. The product was offered as an 'Intranet' for document management in large corporations and was designed to address a market gap by including access for external clients via an 'Extranet' with access control defining free access areas and 'value added' areas attracting additional charges handled by online transaction processing. The product is known as DoKMan (document and knowledge management system).

3.1 History

The core of the DoKMan product was designed by DocSmart who are a Danish software house specialising in document management (DM) systems. DocSmart are also moving into 'knowledge management' (KM) systems to address a logical extension of their original core market, and collaborated with two other companies in the development of the product. The first of these was I-Soft, an Irish software house who specialise in automated scanning and OCR (optical character recognition) systems, and who had an interest in developing distribution activities for other suppliers to complement their portfolio. The second was IberiK, a Spanish knowledge management consultancy working on integration of document management and knowledge management systems as a new market, and also developing a new line of business in providing online 'helper' applications for KM systems.

Because the promotion of the new product would require higher levels of support, and more informed marketing and sales development than previous products, DocSmart were nervous about using their established supply chain which consisted of re-sellers of various technology solutions from different suppliers. They decided to invite their production collaborators to form a promotion, sales and support team to address a Europe-wide market (almost), and to also invite TekWrite, a UK firm of technical authors with a history of arranging publications and translation work in several European regions.

The starting arrangement was that DocSmart would handle Nordic, German and Benelux markets, IberiK would handle Spanish and French markets, I-Soft would cover Irish and UK markets, and a joint financial agreement would be developed in parallel with team development and work definition.

3.2 The Tasks and the Team

The core tasks for DoKMan promotion and support were:

- **MARKETING**
 - Definition and implementation of marketing actions
 - Design of marketing materials
 - Design and implementation of product presentations
- **TRAINING**
 - Definition and implementation of training materials
 - Designing workshops on KM/DM integration
 - Production of user manuals and video
 - Defining and implementing in-house training
- **SUPPORT**
 - Training support staff
 - Organising regional support

3.3 Forming the Team and General Organisation

The first activity for the DoKMan participants was ‘team formation’. Each organisation nominated workers to participate in the agreed tasks which were supported by a draft workplan and process charts. This happened in a face-to-face meeting to allow the team members to get to know each other and to facilitate offline discussions where necessary. The meeting was a one day event followed by a social gathering to promote team formation and team spirit.

During the startup meeting the group formed sub-teams to address each key task area including:

- marketing and presentations development
- training materials and workshop presentations
- translation
- marketing actions
- user support provision
- co-ordination of workflows (ways of working as distributed teams)

It was agreed that there would be mail lists for discussion between members of sub-teams, and a general list for address to the whole team. Document formats, email protocols, and audio conferencing arrangements were agreed in this meeting as the basis for future working.

The team now had a 6-month period till launch, which was designed to coincide with a major trade fair.

3.4 Designing and Implementing Marketing Materials and Actions

The work of this team got started at the initial meeting. The people allocated to the marketing team had relevant experience, and also had access to marketing materials for the previous product line as a basis for discussions. They ‘hit the ground running’ because of this opportunity to engage in open debate and because they had formulated a plan for team working.

It was agreed that marketing actions had to be fully defined by month 3, and that there would be a draft definition in place by the end of the first month. The plan was then to develop brochures and advertising copy by the end of month 4, and produce presentation materials by the end of month 5. The first period saw intense activity through email discussions, and audio conferences were organised every week to allow open discussion of progress. The team leader posted emails to the general discussion list whenever an issue relating to other work streams came up, and it was quickly recognised that team leaders also needed a weekly audio conference to ensure dependencies and shared issues could be resolved quickly.

The training team introduced the idea of ‘tests’ to verify the approach before launch, and this team agreed to participate in tests in month 3 and month 5 (marketing presentations to existing customers as early adopters – advanced marketing plus testing of the approach).

In general the practice of remote working went quite well, but face to face meetings had to be arranged in advance of the two test periods. Many people were nervous about approaching a test scenario without first having a traditional meeting to allow reassurance of the feelings of other team members about critical issues such as style, image, etc., even though they had distributed draft copy to all team members via email at every iteration.

3.5 Designing and Implementing Customer Training

The training team also had a good start after the initial meeting where they had discussed their various training approaches and had reached partial consensus on how a best approach could be developed for the new product.

This group opted for bi-weekly audio meetings to supplement their active email list discussions, and proceeded to define training materials in month 1, followed by workshop design, user manual design, presentations and video design in parallel through to month 3. They then started to design the ‘in-house’ training which was a variant of the multi-company training workshops and aimed at larger users.

Designing the workshops proved to be quite easy despite being a distributed team, as did creation of the user manual. Workshop schedules and draft sections for the manual were exchanged via email as attachments, and team members either commented by using the same word processor (highlighted comments) or provided written comments as email notes. However, the video production proved to be quite difficult. The partner leading this activity tried to relay video (for initial rough cuts) via video-

conference links at ISDN2 rates (128kilobits.sec) and this proved unsatisfactory because of the display quality. They also tried displaying the video 'story board' via a T120 link (shared data – also known as data conferencing) and this was quite acceptable. Team members were able to work on a shared story-board and to agree the final video definition without seeing rough cuts. The draft video for approval had to be sent by courier. After completion of the video it was agreed that video-streaming from the DoKMan web site would have been a viable option and they have now investigated MPEG encoding and video-streaming for future activities.

3.6 Defining and Implementing Customer Support

The development of the support activities started in month 3 when the draft training materials to be used with customers became available. These were to be used as the first part of support-staff training. This team had been passive members of the Training email list from the outset and so were familiar with the emerging materials. Their own discussion list was quite quiet in the early period and focused mainly on some general discussion of the overall approach. The level of interaction increased as materials came on-stream and weekly audio conferences were used to allow in-depth discussion of emerging issues.

It was found during the second phase that working on the DocSmart technical specifications at a distance was quite difficult. Visits were arranged so that they could work closely with technical developers to understand the product in enough depth to feel they could provide support at the necessary level. This was felt to be a problem driven mainly by the complexity of the technical documentation and the fact that the product developers were not present in the team.

The team felt that email discussions, file transfer, and audio conferences were enough to support distributed working in the main, but were glad of the pre-test meetings to get together to really feel that there was commitment and accord on the overall plan. As part of the support plan they decided to examine flexible working further and decided to ramp up support as sales progressed (least spend policy), and to use managed office space (virtual office) for regional support centres until the mass of users justified a more permanent installation (least investment).

3.7 Translation and Localisation

The activity of translation was the last activity to get going and was seen to be the critical pathway. The translation team was mainly staffed by workers from TekWrite who were managing translation, plus one member from each regional organisation planning marketing, sales and support for their region. The plan to have tests at months 3 and 5 created an unexpected activity level for the translation team who had to provide versions in Danish, German, Dutch, Spanish, French and English for the launch phase. They now had to provide three of the languages in two iterations much earlier in the process than originally planned.

The translation team used email discussion, file transfer via email, and audio conferences from the outset. Their activity started with TekWrite working with DocSmart staff to gain access to previous brochures and manuals to understand the general product arena. This was enabled by DocSmart who created a workspace in their extranet for as-needed file access by TekWrite who could then access files via the web. This proved to be very useful and so TekWrite implemented a shared document space on their own server for document management and document sharing. Participants in the marketing and training teams placed documents in the shared space and declared this via email to TekWrite who then initiated translation and placed translated files in the same shared workspace. By this means, all team members could access work-in-progress for verification of translations and determining editorial decisions. Finalised proofs could then be sent for printing and this was done as an in-house activity in small quantity for the two test periods. A significant problem experienced in the early period of file sharing on-line was 'version control' – the system was set up so that partners determined file names. The agreed convention was to include version numbers, but any errors by team members uploading files caused chaos. They resorted to including version numbers on title pages, and now are investigating software options for automatic version control. Some last minute changes to software by DocSmart caused significant problems for the second test action. The manual required changes but the translation team co-ordinator had gone to join the pre-test meeting at one of the sites. However, the translation team co-ordinator was able to transmit text changes to his translators from the meeting (via his laptop connected to GSM), and receive it next day for printing by a local print-shop – team translation on the move !

A final problem for TekWrite concerned the video production. Their task was to translate the voice-over script for the video and to check the outcome. The translation was done remotely like the other texts, but verification could not be done remotely because of the video-streaming problem. For this reason the videos were taken to the second pre-test meeting and this was hosted by TekWrite to allow all translators to review the finished material on site.

The experience of the translation team suggests that flexible working is easily possible but actions which cannot be done remotely have to be planned in rather than 'discovered'. They look forward to higher bandwidth in the future for more dynamic remote working and easier information interchange in any format.

3.8 Summary of Experiences and Key Issues

The DoKMan team found that flexible working is a good way to allow distributed collaboration and that it works. The general ability and **confidence** of team members to get on with their work confirms the suitability of the approach. Instances of 'lack of confidence' did crop up on occasion. People could work easily via email discussion lists, and document sharing via Internet, but where there was uncertainty they would take an issue or an idea to the audio conference to really hear strength of opinion. In

exceptional circumstances they would feel something had to be reserved for a personal meeting (high uncertainty).

However experience shows that, as people work this way more and more, their ability to work remotely increases and they develop new ways of interacting to test confidence in ideas (they also learn about their team members and so know more what to expect).

It was also seen that **bandwidth** was an issue on some occasions. This affected the video development but is a general issue for sources which present high bandwidth demand for real-time (e.g. video, conferencing, etc.), or high volume (e.g. large files). The **time-critical** actions in translation driven by the changed test schedule put that action under pressure which was partly relieved by **shared file space** to accelerate the process. This proved to be a very successful addition to the flexible working tools.

The need to get the support team together with technical developers (**actual presence**) shows that there can be aspects of 'shared' working which are not presently amenable to 'remote' working. An awareness of what can be done, and what your own team can manage, is crucial to successful distributed team working.

Finally, the experience of flexible working allowed the translators to confidently deal with the challenge of 'translation **on the move**'. Not only was this a good demonstration of how flexible work can be, it showed that people can transfer their experience to new and challenging situations and can be constructive in expanding their limits of flexibility.

4. Technology Notes

The DoKMan team used a variety of technologies, most of which are easily accessible by small and medium sized companies.

Email – was used extensively and the use of specific lists to ensure working of sub-teams were of high value. People were not exposed to all of the discussions and could concentrate on their work. Standard email applications were used.

File transfer – was mainly done via email attachments. Most email software supports this activity, but it relies on users having compatible software for access to shared files.

Shared file space – was used by the translators and could have been used by the whole team. Shared file space relies on having a server which can host CGI scripts (common gateway interface) which are programs supporting interactivity in web sites. Such programs are commonly written in PERL for most types of web servers, but can be written in any language. The result is an interface showing folders and files with access control to determine who can access which files. (Free providers such as YAHOO have free email lists and file spaces, but security may be a consideration).

Audio conferences – were hosted via commercial service providers. This costs considerably less than travel, but is not insignificant. Pricing tends to be related to group size and location. Audio conferences require good moderation since people

cannot see each other and need encouragement/control in balance to ensure effective participation.

Video conferencing/video streaming – was attempted by this group. Video conference terminals need high bandwidth to be effective, and implementations with T120 capability can support document sharing where participants can access and operate on a shared document. Participants can also freely display any document in real time, or use whiteboards for diagrams just as in a real meeting. Video streaming also requires high bandwidth and preparation of video as MPEG or other standard (e.g. RealVideo) for streaming via Internet. An alternative is rendering video as a smaller display size and distributing via shared file space (e.g. MPEG).

Mobile communications – were used by all GSM users as part of their normal telephony usage. Linking a portable computer to GSM was used to allow remote working on the move, and this only requires a standard PC with a GSM link and software normally provided by the GSM supplier.

5. Business Structural and Process Issues

The key structural issue for this team was that they could extend their organisational infrastructure by using each other's staff and departments – a virtual organisation. No serious impacts were observed within each company's own structure. People were allocated to tasks as for any other work task, but selection of personnel was an issue. People were selected based on their ability to work remotely and with people from other countries. This created a new culture in some instances and people on the remote work team were seen as having a special position. They were acquiring new skills and in some cases were seen as a threat to the traditional promotion chain. These tensions had to be managed as part of the activity.

Concerning work processes, all were seen to be accelerated in relation to traditional working practices. The immediacy of remote working tended to encourage higher demand for response, and the ad-hoc planning of tests was a good instance of insensitivity to limits. There seemed to be a tendency to view the 'extended' organisation as something that could respond to any demand (de-personalised?). However, each team member had to adjust to accept work rates determined by other companies for whom this project was only one item of business. It seems that work processes require more careful negotiation between companies.

6. Deployment Advice

The preceding summary of experiences highlights a number of issues for consideration. First, a team should be formed in a way that ensures good contact and understanding between members. The use of personal meetings and an explicitly agreed workplan can ensure that people will work together as if members of the same company (for the purposes). Any first attempts at distributed working in this way should capitalise on established relationships, with fewer unknowns, to benefit from existing shared understanding.

The creation of new critical points in the workplan can cause pressure and risks, and so should be avoided where possible by careful project planning, project tracking, and the presence of a key responsible to deal with changes to plan. The leaders of any sub-groups or sub-teams should have had their own discussion list / audio conference schedule to ensure shared-management perspectives.

The use of technology can benefit from easily available technical solutions generally in place at SME sites. Special technical solutions such as video conference or shared workspace may be necessary and should be fully prepared and tested in advance of project startup if possible. For video, SMEs will be restricted to whatever bandwidth can be obtained in their region - ISDN and ADSL are the current most widely spread technologies. In the case of shared work space, this can be hosted by any web server and can be configured to allow access control at all levels (ensures 'need to know' approach to information management).

For acquisition of in-depth understanding and knowledge of specialist materials, it may be necessary to get technical people together to explore and understand e.g. a new product or service. This highlights the fact that the concept of 'flexible working' must itself be flexible and able to adapt to emerging needs. In most companies, working practices are relatively stable over time, and so adopting flexible working for distributed teams really has accept 'flexibility' as an ongoing process.

7. Related Cases

The web site at <http://www.flexwork.eu.com> includes a wide set of cases, technical briefings, and advisory documents. A large number of these are relevant to the themes in this blueprint. Items of specific interest include:

Regional cases:

Swed.pdf - Öckerö Telecentre - providing support for Volvo and Ericsson.
Nor.pdf - Creating work and enterprise - teleworkers, telecentres, and SMEs.
Aragon.pdf - Networking, collaboration and communication - telework and centres.
Gatine.pdf - Extending markets in the agro-food industry - telework and telebusiness.
Exeldat.pdf - Excel Data: Denmark's first satellite office
Fincoop.pdf - Sustainable Suburban Economy - Cooperative using teleworking.

Technology Cases:

c1 - bscw shared workspace system
c2 - construction site mobile operation support
c3 - environment for the collaborative working of medical authors
c5 - multi-site co-operative 3d design system for architecture
c10 - concurrent engineering environment in the building and engineering structures industry
c13 - virtual enterprise product information model
c15 - web-based tool supporting quality assurance and management of projects
c16 - multimedia working for small companies (groupware)

- c19 - brokerage services for SMEs mediated by chambers of commerce
- c23 - remote maintenance by specialist SME manufacturer
- c24 - tools for distributed publishing (groupware)
- c25 - sme collaborative working in car industry supply chains
- c26 - distributed software production

8. Related Information Resources

The web site at <http://www.flexwork.eu.com> includes links to a large number of online resources, many of which are relevant to this blueprint. Resources of particular interest include:

<http://www.flexwork.eu.com/> – general flexible working resources

<http://www.gilgordon.com> – general flexible working resources

<http://www.eto.org.uk> – general flexible working resources

<http://www.flexibility.co.uk> – general flexible working resources

<http://www.telecommute.org> – general flexible working resources

<http://www.advanced-workplace.com/> - collaborative SMEs

<http://orgwis.gmd.de> – groupware tools / collaborative working

<http://www.usabilityfirst.com/cscw.html> – CSCW and GroupWare Index

<http://www.regen.net> – regional regeneration partnerships