

An Ethnographic Study Of Graphic Designers

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Abstract: This paper is about capturing and analysing requirements for Computer Supported Collaborative Work (CSCW) systems, showing that the approach taken differs from that for more traditional IT systems. Social science research paradigms are used to expand the nature of work in constrained environments. Interaction-based studies of office settings and a case study of a set of knowledge workers who manipulate information leads to an investigation of methods for translating their tacit knowledge into more meaningful requirements statements. The work presents views of the organisation through the participants eyes as contrasted with more formal views of the organisation as a business.

Introduction

One of the influences of social science on the field of CSCW is to give a broader understanding of the nature of work. In finding a rationale for how activities are carried out in the office-based societies which form the basis of many studies, it is possible to clarify what it is about working together in groups that make the construction of computer systems to support them so different from that of single-user systems. Such studies document the underlying organisational and social structure of the organisations in which people work and identifies just why they did the work they did in the way that they did. We can use these findings as a basis for design of more effective CSCW systems.

Watching how people act normally as they carry out their job in their usual work situation is not yet a common data gathering technique for collecting user requirements for systems development. The techniques involve non-intrusive observations and some recent researchers have analysed modern office or operations contexts (Anderson and Shorrock, 1992; Bentley et al., 1992; Button, 1992; Dubinskas, 1988; Heath and Luff, 1991; Hughes et al., 1993; Kraut et al., 1991; Linde, 1988; Nardi and Miller, 1988; Reder and Schwab, 1990; Rogers, 1992).

The technique of ethnography has a number of disadvantages as well as advantages. The large amounts of data it generates are hard to analyse, especially as the techniques for such analysis are not well codified. The observer has no control over what can be observed at any one time so that important but rare events may not be observed at all during the course of the study. There has to be some guidance on what to collect and how to limit fruitless attempts to watch everything that happens in a small project group. This bounding of the field of view seems to be necessary when looking for specific traces of activity and indications of communication episodes.

The advantages are that the observer can obtain a reasonably detailed understanding of the actual social organisation of the work setting and not be reliant upon others interpretation of how things should be. Inside knowledge of the procedures and data that participants really use, not just what they say they use, or what the company guidelines say they should be using, can be derived and experienced at first-hand. An insight into the way things work allows an ethnographer to live inside the organisation rather than apart from it as an external observer. The patterns which individuals make as groups in a particular environmental setting show some of the participation structures which provide accountability of action and the way in which situated learning and the acquisition of competence occurs. The normative rules and actions instantiated in the workplace culture lead to observable rules and interpretation of what these mean in the context of the society being studied. It is critical, however, that the ethnographer remain detached enough to maintain analytical impartiality and scepticism in order to utilise the study for detached analysis and to make connections between the unfolding patterns. In this way, an ethnographic model can be derived (see Figure 1) as a means of representing relevant aspects of social context.

In representing workplace worlds ethnography can illuminate previously hidden and unremarked underlying interaction and shared knowledge. However, that knowledge must also be somehow passed onto systems designers if effective CSCW systems which support work practices as they are constructed by participants and to be built.

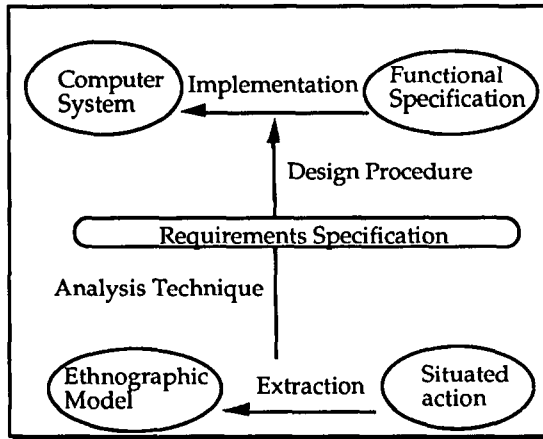


Figure 1. Ethnographically informed requirements specification.

This paper describes a case study, carried out using ethnographic techniques, which tries to bring to light what some of the crucial features of collaborative working might be. The observational studies took place in the offices of two different companies and consisted of watching staff as they went about their day-to-day work, noting activities and environments, conversations and interactions. The people studied are knowledge-workers in that they manipulate information and insubstantial material instead of manufacturing physical products. The distinction is that they handle data, ideas, information and concepts rather than basic material. There will, of course, be a realisation to their work in the real-world in terms of paper-based documents or the artefacts which are the outcome of the processes they engage in.

Case study requirements

Before observational studies can take place, sites must be selected and negotiated and a certain level of site specification has to be gone through. The task specification was based on the premise that small groups producing an artefact, or an identifiable piece of work within reasonably specific short time-scales would be a fruitful starting-point for identifying how knowledge workers operate. It was believed that sufficiently detailed data on a small set of processes in an intensive study, coupled with interviewing and discussion could be collected. The task which the knowledge workers undertook had to be one which was not merely repetitive (as in manufacturing on production-lines) but had to have a number of distinct features which made it individual enough so that, even though a number of the

same processes might be carried out for each instance of the operation, it constituted a new information manipulation process each time. One example is that of producing a newsletter to a designated production schedule with each issue being produced by a slightly different set of activities chosen from an overall repertoire. The activity of producing artefacts to a format and, potentially, one mediated by guidelines and quality procedures was a viable source of study. The groups had to be small enough to permit observation of a comprehensive subset of their overall activities; had to demonstrate a certain amount of interpersonal interaction and had to pass material and work-in-progress from one to another.

Some consideration was also given to what features of collaborative work were being sought. Besides identifying typical activities, interaction episodes, procedures and spontaneous events, data was collected on the physical constraints in the work environment, individual workspace organisation and the way in which physical artefacts progressed through the system, focusing on the differing views of such artefacts held by those involved in their production. Visual records, samples of work and photographs helped in analysing data, serving to inform and validate the historical justification of actions. Instances of the following type of activities were used to provide an insight into the work activity:

Traces or a history of passage left behind in the physical world by a document or specific activity, setting up cues that can be read by participants but not readily explained or easily discerned.

Communication codes which demonstrate shared interpretations, not only of language and jargon, but of actions' such as the siting of artefacts to indicate their relative importance.

Snapshots of communication episodes which might otherwise be missed because of brevity, location (in passing, outside) or because they are embedded within another activity.

An awareness of the implied procedures that underpin the way in which work is carried out and which allow the use of shared information resources such as filing systems (the knowledge of how it is organised, why an item is placed just there and where to find other items). Such information is usually hard to express but must be learned by novices (and not just be explanation, but by demonstration and observation).

Tacit knowledge which, like expert knowledge, is difficult to quantify, describe and identify objectively but which gives a feel for the work, for anticipating what is to come next, for allocating time and resources and for personal and implicit group organisation

Social organisation observed in situ and which may differ substantially from the official expectations drawn from job descriptions and organisation charts.

Field studies of two work groups within organisations were carried out: the first, a technical writing and authoring group, the second, a graphic design studio. Both adhere to the study requirements identified above. Data from the former, a Technical Publications Unit (TPU) is reported in previous work (Gilbert, Hewitt, Murray and Wilbur, 1991; Murray and Hewitt, 1993) whilst that of the Design Studio is reported on here.

Organisational detail

The Design Studio is part of a medium-sized US-based motivational and rewards company. The design team provide promotional material for the company's clients and the programmes which it sells and organises. The finished material goes out to the sales staff in the client companies in the form of glossy brochures, newsletters, personalised invitation letters, posters and the like. All are highly visual and, like advertising, have a distinct aim: to sell and motivate salespeople to sell more of their company's products; to buy a particular item, or to be persuaded on a course of action. Clients are normally large multi-national companies and are administered by account directors or account managers who tend to have ongoing responsibility for a particular client company. There are five account groups in all. They keep themselves separate because they are dealing with competing clients: like an advertising agency the company's policy is to keep them apart so that one client company does not see what another client company is doing for sales promotion.

The Creative Design Team consists of 7 individual designers, three of whom are Creative Art Directors whilst the others are more junior and are Visualisers/Designers with one being a Senior Visualiser. There is also an Administrator who, additionally, does some basic computer design work; a Print Buyer and two Desktop Publishing (DTP) staff. The Administrator is located in the Design Studio. The others have offices next to that of the Creative Services Manager, a short walk away from the studio itself. The group was observed informally on an initial visit to get a better feel for what the team as a whole did. During the study itself, all members of the Design Studio were observed but attention was focused on two Art Directors following through a number of jobs. Staff were interviewed and material on their general activities and projects collected. Observation, note taking, schematics, audio tape recordings of interactions and photographing of locations and collaborations were followed by structured interviewing of the individuals in the group. Tape transcripts and field notes were made, documents and examples of standard forms used by staff were collected and copies of the designs produced by them at various stages in the different job cycles were collected.

The designers occupy a large room subdivided into small office sections by partitions and with a central space taken up by three Macintosh Quadra computers, light boxes, a colour photocopier, a colour printer and a drawing board. All of these tools of their trade are shared. Each designer has an individual space but not all have an individual machine. Two staff (one an Art Director, one a Visualiser) have their own computer and are more experienced with the drawing and graphic production software they use. The others use the remaining machines, which they call boxes, as need arises. Each person has their own portable hard disk in a distinctive and individually decorated carrying case. Every large project also has its own disk to allow access by everyone and to maintain an up-to-date record of recent work carried out. Each designer has their own drawing board, set of tools and implements, etc. The environment is highly graphic, with visual puns abounding and is decorated with samples of the best of their own and others work. It is extremely colourful and often looks cluttered and rather untidy. Leading off the main workspace is a darkroom and a pasting-up room. There are telephones on some desks but not on all: the main telephone link to the studio has two instruments, one in the central area and one on the Administrators desk. While it rings infrequently, it tends to be ignored by the designers as most of the calls are routine matters which she deals with. If account managers want to discuss work, they visit the designers themselves. Occasionally, a designer will seek out an account manager in another part of the building to show some artwork or to ask a question. The studio has occasional visitors, clients who are being shown around the building, but the designers tend to ignore them completely. Account managers walk in and out frequently, to discuss jobs, to look at slides, or to bring text and supporting material. At least once a day someone from the local DTP company calls to deliver printed output and collect jobs. There are visits from sales representatives, the printer and, occasionally, photographers. This forms part of a normal days work and these people are treated as part of the extended team. There is a lot of banter and noise, with three radios playing music and comments constantly being made. Overall the atmosphere is lively, friendly and outgoing, sometimes quite manic and, when there is little work, subdued and rather bored.

How the work is done: the briefing

The designers have most interaction with the account managers who brief them on the jobs they are to do. The briefing is a central part of a designers work and all the designers interviewed had specific comments and opinions on what an ideal brief might be. To give a procedural account, an account manager has an initial discussion with a client to determine what the focus and needs of a particular campaign will be. Because the underlying administration is handled by clerical staff, what the clients see and what the account managers sell is not the detail (the planning, the handing of mail, the checking of claims, the arranging of travel, the

special events which happen) but the way this is portrayed graphically to the eventual users: the salespeople who are to be motivated enough by the thought of rewards for carrying out their work well that they will sell more products. It is the image of exotic locations, luxury goods, special rewards and the way in which these are presented as attractive and desirable that fuels how the company sells its wares. In this way account managers promote the services of the company but are dependent on the work of the designers to carry the company image to the outside world.

Although the briefing is central to the ensuing design in setting the parameters, in producing initial ideas and suggestions, providing a context in which to generate solutions and is, in some sense, a meeting of minds, it rarely lives up to expectations. Much of a designers work seems to be in amending slight parts of a design to match the clients preconceptions, or the interpretation made by the account managers, or in defending parts of a design and explaining why something works if it looks this way as opposed to that way. A designers account of what briefing should be is:

The ideal situation should be when one goes to a briefing is the account manager or account director should actually have an idea of a theme, so you can design around it, if there's travel involved, you have locations sorted out, possibly even hotels, normally there's some idea of where they're going to send stuff to set it up for the clients, so we need to know we can incorporate it into the design. The other things we need to know are corporate colour schemes, logos, some clients are very picky about colours. The other thing we need to know is how much we are going to spend, if there's going to be a limited run of 100, there's no point in doing a 4-colour, glossy 16 page brochure with cut-outs and gold-foil blocking, so we need some idea of budget and run, so we don't do anything daft on it. Basically, once they have given us all this, we should be able to sit down and give them the job an hour, a day or two days later.

In reality, the designer is told something of the form,

Its for New Campaign (*usually some sort of buzzword with successful connotations*) for Company X and this is something that has been done before, so it wants to be in the same sort of style, its got to have that logo down the bottom. That was one we have done previously for a holiday in Eliat in Israel and the company really liked it so they wanted something similar to that.

The designer and the account manager working together during the briefing will generate ideas, or, more commonly, the designer will generate an idea and the account manager accept or reject them. In the later stages, the designers produce

mock-ups, looking for images in image books to generate a design they can draw up very quickly. They develop a layout as an indication of where things should be and this is worked on with the account manager, depending on factors such as how experienced the account manager is, how good a brief has been given, how well the designer knows the client and style preferences, or the time allocated to the work. Given the time pressures they work under (hours and days rather than extended periods) designers tend to talk through with the account manager, before committing to a final design instead of generating design ideas and then asking for feedback. There may be a discussion with the account manager (but not directly with the client) if the designer thinks that criticisms are valid or if it really is a serious criticism such as, You cant have that there because the client say their logo has to go in that bit. The designers explain that things look different on the screen than they do on paper and, since client presentations have to be made with the paper mock-ups, they cannot always tell exactly what the final product is going to look like. Things can change quickly, especially with volatile clients and an account manager could point something out or come up with some new information which means that the design will have to be changed.

Although some account managers seem to have a lot of design knowledge, talk in very technical terms about fonts, colours and sizes and have a level of shared understanding of what the design process involves, they may be intimidated by the Art Directors and so the subsequent briefing will be sketchy and extremely quick. This is accepted as the type of work these individuals produce is known to be good, of high quality and usually successful at selling the concept. It is a factor that has been taken into account when allocating people to the different jobs. Job allocation is an area which they take as read but which shows, like briefings, some of the underlying assumptions they use to construct their work and the taken-for-granted knowledge which they exploit.

How the work is made: job scheduling

The designers do not usually know far in advance what they are going to be working on. A job schedule is prepared and posted either on a Friday afternoon or on a Monday morning. Some jobs from the previous week will run over but others will be new, or be newly approved. There are seasonal fluctuations. Like many commercial businesses, there are time-lags so that they may be working on Christmas promotions during the summer months. However, for the most part the week-to-week part of the job and anticipation of future work depends on the creation of the schedule for each team member. This is actualised in a simple chart on which individuals names have been customised in different typefaces to make it look more designy. The Creative Services Manager is responsible for scheduling and he distributes a copy to each person. An extra copy is stuck on the wall for

reference. The charts are subsequently meant to be used for time-coding and costing each job.

The process of job allocation is an interesting one since it appears to be influenced by the personality and manner of the Manager himself in addition to his managerial responsibilities. He is very protective of his designers and will not allow account managers to request work from them directly: others in the company sometimes rail against this but to no avail. They must work through him and he must balance his schedule against a number of constraints. He negotiates his teams time, balancing this against the desires of the account managers. There is a little tension between the two which come out in the briefing process. He says of this activity,

We try and plan a week in advance to allocate the time and see if we've got any gaps, or whether we've got any problems on timing, but it has to be totally flexible because things get changed and some of the jobs which we've been working on have been in the studio, in and out, over two weeks now because people haven't made up their mind whether they want a visual doing in a particular style or not. I know of two people who aren't in the agency, they're on holiday, they might well come in on Monday with work to be done.

One reason for tension may be that the work is not long-term: the jobs come, are designed, are printed and sent out. That is the end of the process as far as the designers are concerned and anything which returns is treated as a new piece of work. This attitude is a curious one: the work they produce is essentially disposable, short-life and throwaway. It has to fulfil a purpose for a short period of time, do that job as well as is possible and then be replaced by something else. This attitude seems to permeate much of the working styles they adopt. They concentrate and expend effort on what they do (some are very meticulous and, if time constraints let them, are perfectionist) but in the end that job has to go out and the next one comes in. It was explained that there was no point in keeping archive material because what they design is transitory. They keep original artwork that goes to the printers but not software and computer files. They do not see any value in re-using old designs and claim that it is usually easier to redo a design from scratch, scan in previously worked material, or look in libraries for elements to incorporate into new designs. Some of this may stem from the need to keep the competitive clients of their company apart and to utilise different styles for each client, perhaps it is the result of the way in which training influences designers, or perhaps it is that they treat their computer as tools, as adjuncts and hesitate to explore it too much lest they may become dependent on it. It may be a way of maintaining professional skill and illustrating that design cannot be achieved simply by putting together pre-packaged elements.

The scheduling process is not quite the collaborative process originally expected but it does impact very much on how the design team operates and is based upon a set of assumptions that might not be made clear without an ethnographic focus on collaborative activities. One obvious constraint in most scheduling scenarios is the time and cost of the work to be undertaken whilst another is the availability of each designer. However, the overriding constraint appears to be the desire (or the need) to keep the designers happy by allocating to each the work they like and are best at. Each have different styles and preferences and some may be used to working for a particular account manager on a long-running account. One designer, for instance, produces bi-monthly newsheets for an electrical company and only he works on the account for a particular manufacturing company. Since the image of a campaign is what the company essentially markets, this is heavily instantiated in the designs produced by the design team, which is itself closely tied to the individual graphic style of each designer. The Creative Services Manager discusses how he allocates jobs,

First of all I've got three art directors who are the top Visualisers and I would tend to try and get them booked up first with design and I would discuss with the account director what type of job they saw it being, because Carly can be very illustrative. Jon is very graphic but knows his way round the Apple Mac very well. Tony is middle of the way between them, very illustrative but can do good graphic-type graphic work as well. Kelly is mainly a graphic-type designer, Sam likes to be pretty illustrative, Peter a bit of both. Colin is very good with the Macs and got quite good graphic eye, so really I try and pick the artist who is available that most suits the image that the job might have. Then obviously when it comes to finished art work I would move it ideally away if it was the art directors to one of the others to finish. If it is a job that has already been started by one of the others I would let them see through their own finished artwork. That's the general rule but sometimes through pressure of workload or holidays you have to use someone else to finish the job off. And they don't enjoy doing that particularly.

His reasons can be seen as being:

to give those who are at the top of the design hierarchy the work with the most creative elements and to pass the production of finished art-work (that is, what will be sent off for printing) which is much more tedious and mundane to the more junior people.

to accommodate the different styles of designers.

to maximise the skills each has (for instance, one person is much better on the Macintosh systems than the others who prefer drawing freehand).

to attempt to match the artist to the image the job will have.

The difference between senior and junior is a peculiar one. In this design environment there is not lot of teaching, or apprenticeship, it is more a group of equals and with some being more equal than others, with a strong emphasis on learning-by-doing. Although the boring parts of the work have to be done, all know that the institutionalisation of the graphic design hierarchy means that the Visualisers will themselves be Art Directors at some stage. At times, some of the work will not be divided up in such a simplistic fashion. The Director claims that ...they all prefer to be doing creative work, designing..., but they are flexible enough to cope with seeing through the whole process when the need arises, or when it is actually easier to do so,

...if it is designed properly on the Apple Mac by the other artists then they can take it to their own finished art fairly quickly, Carly quite likes doing unfinished art. That's partly because as she designed it how she has constructed it it's easier for her to turn it into finished art than for someone else to get in there and wonder how it has been constructed electronically.

In looking at ways in which computer technology could assist in group processes, one obvious system to investigate is that of an electronic scheduling system. Such a system could easily cope with the mechanical aspects of time logging and costing, perhaps as a spreadsheet. If so, people could just call up the schedule and see what work they had allocated for the day and then log the time spent. However, the Manager claims to prefer a slightly more personal approach with them, acting in a sense as their champion and protector. One reason he gives is that he himself is a designer and takes many of the early briefings. Another is because people who do not know about creative and print using the wrong words in briefings. Again, he says that it is,

...also a matter of trying to fit the type of job to the type of artist, the style of the artist, once again its a functional thing, if its just inputting data, then any data entry person can input it, but with this we try and get the jobs where the people will work well with the account people and people have a particular style, if the client wants an illustration we give it to somebody who can illustrate.

Work collaboration

One of the areas investigated was collaboration in working environments. As well as being what is obvious, as in the briefing sessions, when people are actually saying things to each other about what they are doing, there is continual hidden co-operation. When the people observed in this study are at work they are they are not

only individual personalities but are also designers, professionals doing a job. But that job takes place in a group situation and, although their part in the group may be as individuals, each designing and creating their own material, they do not operate in isolation. Partly this is because of the actual physical environment, partly because of the way in which they all work, speedily and in sight of the others and, partly through the process of creating an artefact from an idea in a supportive social environment, in which shared perceptions and understandings about the way things work are the norm. They form a distinct entity in the company with a profile known to all account managers, protected from external pressures to a great extent and producing the basic images the company stakes its reputation on.

Since the space they occupy is so open and the machines they use are in the centre of the room, what they do is seen constantly by the others in the team. Briefing sessions take place in the studio in clear sight and sound of everyone. Work in progress is left on drawing boards, discarded sketches, photocopies, printouts and transparencies are left lying around on desks or on the light box. Material is left on the paste-up table and cleared off to one side by the next person who needs to use the table. The transparency books which they have been consulting or the clients design style guidelines are left open at the page they were looking at. The scheduling sheet for the week shows what each individual should be doing and experience of the job gives them an insight into the workload and concerns of each of team that week. They are proud of their work and happy to display it and show it around when satisfied. They know each others style fairly intimately and give credit for good work, displaying it in the open, using as a cover for a disk box, setting it frames for display in the company foyer. Above all, the conversation and constant self-commentary and calling out for assistance on computer problems gives an overall impression that all the group know intimately what the others are doing from hour to hour. Design is not hidden, it is constructed in public so other people can read it and accepting commentary on it from somebody else is part of a tradition they embody. As a consequence, there is a distinct feel of what the team as a whole are doing. People follow through themes, unconsciously picking up on what the other designers are engaged in to make for patterns and correspondences. These may be pertinent to the situation at the time through external events or it may be that what others are doing is fitted in to an individuals own concepts.

They do not often talk to each other directly, asking what is thought of a design. What happens is that people will troubleshoot a problem on the computer. For instance, someone may say, I don't know how to do that...what's happening here? and one of the others will come over to assist or a shouted comment is made by someone who knows what the problem is. They will know if someone is having trouble with a design concept or a layout because his comments and the spread of discarded work will make it obvious: there is a lot of opportunity to know what