On Rabbits, Space and Cards: Moving Towards an Informative Workspace

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Abstract

This paper addresses the initial experiences of a UK-based software development company while introducing the three elements of the ‘Informative Workspace’: open-plan working areas, extreme feedback devices and big visible charts / information radiators. Our experiences leave us convinced that visibility is vital, but a key element to successfully enabling an informative workspace was arguably missing in our case: control and ownership of the environment. In our case, the open plan work area contributed to the lack of ownership over the space, and lack of clarity led to a failure of an index card tracking system.

1. Introduction

The second edition of Extreme Programming Explained [1] introduced a new core practice known as ‘Informative Workspaces’. This practice is centred around the concept that a workspace should be informative about the working practice of the team. This is achieved through three main activities: Open-plan working areas, Feedback Devices and Big Visible Charts / Information Radiators. Together these practices lead to a working space which is informative and helpful.

Future Platforms Ltd. is a small mobile software development company based in Brighton in the UK. We are a team of specialists focussing on the design and development of mobile services. At the time of writing, the core team comprised five developers, a project manager, a lead designer and a client services director. The company mostly runs small projects lasting from a couple of weeks to a few months, and takes an iterative approach for larger projects. The company aims to take on many of the principles and values behind agile development, emphasising customer and team communication, and uses practices such as stand-ups, retrospectives, continuous integration, and so on.

This paper presents our initial experiences when introducing and incorporating Feedback Devices and Big Visible Charts into our existing open-plan office workspace. It proposes that our lack of ownership over the space may have led to failure in adoption of a charting system, when combined with a lack of clarity about approach. The story is explained through quotes from the people involved, gathered from a series of qualitative interviews.

2. Open Plan Working Space

Our current work environment is already open-plan and modern, a lovely converted loft space in central Brighton, UK. The office space is located at the entrance of the top floor of the building. The space is light, airy and very open plan. We share the loft space with two small graphic design companies.

“I love the space we are in. …I quite also like the fact that there are other companies in there. It’s nice actually. …I think the vibe you get out of having designers-types in there is quite a nice vibe to have.”

There is a small kitchen area near the entrance and a group meeting area (See Figure 1) at the other end. These are shared by all the people working in the space. Because both ends of the office are shared by everyone in the loft space there is an awareness of a lack of privacy - especially for meetings in the group meeting area.
“I think (clients) find it quite, not intimidating, but weird that it’s in an open space with a radio on and there’s other people listening in. I don’t know if that makes them as open as they could be.”

“I think we are a bit too crammed. . . . We already have the problem, of that if there wasn’t anybody in there we would certainly fit a lot more easily into that space.”

Our space is naturally conducive towards high-interaction between all company members and clients. This is wonderful while numbers are low, but detrimentally impacts on the group when numbers are high - as distractions and noise are unavoidable. There has been a notable increase in headphone use as the number of people on the one table increased (at one stage there were nine people on the one shared desk). Here we can see that the space sadly still lacks a vital feature which can be found in a divisioned office - somewhere quiet and private to go when we need to concentrate and think. The use of controversial ‘do not disturb’ signals ended up being put in to place by some, as concentration can be difficult to maintain, mostly due to noise.

“Another factor is the noise. . . . I find I put my headphones on more and more. You get so much noise and you can’t concentrate any more. My attention keeps getting diverted.”

The noise faced by those at the desk is amplified by the noise from the other companies within the space; not just because there are several people in the room, but also because they like to have the radio on at all times. In our case this means that everyone at the office is constantly listening to BBC Radio 2. It can be heard at the workdesk and in the group meeting area with equal impact. It enters conversations regularly; both in meetings and during the average work day where people spontaneously start singing along or discussing a particular singer. This has been anecdotally referred to as a problem caused by a difference between programmers and designers; ‘designers like noise’ and ‘programmers like quiet.’ In this case the two design companies like the radio on, it helps them to work, but the developers in our team have the opposite feeling.

“Don’t like Radio 2. The radio annoys me. . . . It appears that designers like the radio so that they can let their mind wonder, probably give them inspiration, maybe conjure up an image. Whereas for us, whereas for us, we all put our headphones on and stare forwards. We have a goal to get to, it’s been designed, boom. The music is just a background irritation. And the amount of times I have heard a song on the radio that I know, and I’ve actually, while typing, put a lyric in my code by accident because its going through my head.”

In terms of noise the team members have no control over it, without resorting to headphones, thereby losing the natural, helpful communication that would otherwise occur in

The majority of developers in the company share a long workbench style desk. An island desk sits nearby (See Figure 2). This long shared desk encourages communication and interaction between team members, but can also lead to a distracting, messy and noisy working environment. The long desk layout is recognised as not ideal. Stories are told by the group about the ‘last supper’ table, about how although it is good for face-to-face communication, it can also be a distracting place to work.

“The last supper for however impractical it is . . . it’s a bit ugly, it’s a sight, you actually do end up talking more. Simply because you have direct eyesight contact . . . just literally a glancing interaction, not that we necessarily have much to talk about, you kind of nod at each other occasionally.”

This has been aggravated by company growth: “It can feel cramped, and you can feel very open.”
an open-plan workspace. They do not even feel that they have the authority to ask for it to be turned down a little on the occasions where it gets turned up.

“I personally have been in the company for two years, yet I don’t feel comfortable asking to turn the radio down.”

“There’s the noise of people talking and there’s the inevitable interruption you get from knowing loads of people together. There’s the radio which we don’t control. I think it’s as much that we don’t control the radio as it is the noise. I think people might choose to have some music on in the background if they had some say on it.”

There is a bookcase and a single whiteboard available for use by the company. There is no other wallspace free for use for two reasons; the space is so open that limited wallspace remains, and the little bit which does remain is not usable. It is fashionably exposed brickwork, leaving little that can be done without either damaging the wall or creating something unsightly for the other companies. This means that any visible charting or brainstorming needs to be conducted on the one whiteboard (which sits directly behind two of the developers, so they cannot help but be involved). How this impacted on the charting system will be discussed further in section 4.

“Lots of wall space is what we need. …It goes back to sharing the environment again - I can’t put lots of posters up because that would annoy (the others), so I’ve got to be a little careful with what I put up.”

Another notable aspect which also arises from the open-plan design is the lack of storage space available, since furniture is restricted to keep all companies in the space coordinated in design. The is constant concern about the tidiness of desks within our company, and how that reflects to vistors (both our clients and those visiting the other companies). It has been noted in response by one employee that it is actually quite difficult to maintain a neat desk when the style was so open-plan there is nowhere to put anything.

“When it gets a bit busy, my desk gets a little bit tatty. There’s no personal storage space for me …If I had a personal space my desk would be a lot cleaner.”

“It’s like a teenager’s bedroom sometimes. I’m not good like that. I know where they’re coming from. …I think even if we had storage I don’t think that would lead to a nirvana of nice clean desks.”

Issues around mess are generally explained in terms of ‘programmers’ being messy and ‘designers’ liking things to look nice. It could be argued that because the team do not feel like they have any control over the space, they are less likely to take responsibility for keeping it clear and tidy.

The lack of ownership that the team can take for the space should be reflected on.

“We don’t control our environment, which is a problem. It means for historical reasons we have an environment which is not suitable for software development and we are making the best of it. We have too many people there, we have not (until recently) had any flexibility with space, which compounds the problem. Any conversation on that big desk interrupts 6, 7 people, which is appalling.”

3. Feedback Device

Seeing an increased use of feedback devices in other companies for project automation [2], last year we were inspired to make our own. In this case, we reprogrammed a Nabaztag rabbit (shown in Figure 3). These rabbits are wireless devices with a programmable API, so we reprogrammed it to act as a build monitor.

Figure 3. Nabaztag Feedback Device

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1http://www.nabaztag.com/
Whenever a build is checked in to Cruise Control\(^2\), the rabbit will activate, flash, move its ears and name the person that checked in the code. Originally it was used just for broken builds, but we discovered that it was useful to have it also indicating fixed builds as well.

In our case, because we run several small projects at any one time, we started by applying it to only one small project. This meant that it originally activated just when the build broke on a one developer project - meaning that it originally only ever named one person and only ever in a negative way - which was not ideal.

“We’d just got Cruise Control working, and it was reporting that I was failing builds constantly, and I was the only person, that was a horrible thing. Try spending four months with a rabbit shouting your name, saying that you’d failed the build. … You try not to feel depressed. … In fact it was encouraging me to not write more unit tests because that was just more that could fail.”

We also discovered that the noise that our feedback device makes is potentially vital to whether the device is an annoyance or a pleasure. In this case a repetitive jingle that it played encroached in an irritating way on all the other people in the room. Not everyone works in the same company, so not everyone wanted to know.

“I have mixed feelings about the rabbit. … I liked it when we hooked it in to Cruise Control. … When we had that annoying music, that clarinet thing that was going on for ages, that was just driving me insane, and I knew it annoyed a lot of other people in the office.”

“It was talking too much. It was flashing and talking to me.”

The Nabaztag has proved useful for providing rapid feedback on the status of a project, and making all involved aware. We actively miss it whenever we cannot have it running, and it has become a central part of team projects. How will people in the room. Not everyone works in the same company, so not everyone wanted to know.

The company already used task tracking software to keep track of feature development, but the idea of a tracking system that visually pushed information at us was very appealing to the lead project manager and company director. Although we did not use user stories, it was decided that a good place to start might be to implement a card-based chart \([3]\) to track progress through features on one particular project. The trial ran over a four-week time frame to cover the duration of the project.

The first main problem in implementation was the lack of space in our office to put such a chart. As mentioned above, open plan offices have significantly less wall-space on which to play, and in the end we had to use our only whiteboard to hold the chart.

It was expected from the literature that the use of index cards would create a strengthened sense of ownership about the project. People would be able to see how it was progressing and feel more involved, through the physical chart. Everyone would be able to see what was happening through just a glance, and physically work with it.

“I liked the physical sense of doing something and stamping it, and putting it up on the board so that everyone could view… It had nice visual aspects but it is hard to get people out of their seats, or to time-track.”

The project manager and process administrator jumped straight in to writing the features on cards and sticking them up on the whiteboard - giving the team a stamp and ink to use to stamp the cards when they were thought completed. The board only related to the work of those involved in the project, which was half of the people in the company. Porting to various mobile phone handsets was distinguished by a different card colour.

It is possible that the choice of granularity on the cards was incorrect, and that more time could have been spent explaining the concept to the team using the board in advance. The index cards related to features and some of the developers had not been involved with planning the features in the first place. This was compounded by the fact delineation was not as clear as it could be - sometimes a person could be working on five cards at once. This led to confusion; monitors covered in multiple cards at a time, and one card was even lost on the first day!

These were just cards which they were shown on a wall - to take when working on and stamp when finished -
and therefore meaningless. This was compounded by the fact that feature-based cards “weren’t very responsive to change.”

“I think the mega problem was that it wasn’t set to user stories. It was set to features. Some of these features went together as one thing, and some of them were split across several things. . . . They didn’t really match up with what we knew we had to do.”

“I don’t know. I was a little bit removed from it. . . . I remember we had a process meeting where we were going to use the cards. And then we took a project where we had already mapped out the features, and we wrote the features on cards, and we stuck the cards to a wall. And then the cards kinda moved around a bit on the wall, and then the project was over. Loads of things were half-finished all the way through the project so the cards never really came down. Everything was contingent on something else.”

The lack of involvement of the team in the set-up of the system also resulted in an interesting shift in perspective of the team. We realised that this may be due to a lack of ownership on the side of the developers; the cards meant nothing to them. They had not been involved in planning the features, they had not been involved in setting up the system, and they had not written the cards themselves. They felt like they had been placed in the role of children; having been given cards and ink. They wondered whether, if they did this well, they might get gold stars. Similarly the project manager despaired at her role as primary school teacher (especially when she had to confiscate the ink as it kept getting spilled over the desks).

“I like the whole idea of stamp, tear, and it’s gone. It’s ripped up, it’s in the bin. . . . It did feel a bit puerile, childish, but a bit like you had to show teacher and it was a bit theatrical. . . . It did feel like it slowed work down because you had to take this card to someone and then they had to look at it. . . . I found it a little unnecessary.”

“The stamping thing, . . . it’s the ‘this thing has been done stamp’ which is annoying because we kept putting them back, but that hasn’t been done, but it’s stamped, it’s in the wrong place. Pointless. . . . It’s like ‘Aha, I have defeated you.’ It said ‘Staple this to your face’, why, of itself as a product, it doesn’t mean anything. I don’t know why it said that.”

It was difficult to maintain the chart in the space for other reasons as well. As mentioned previously there was limited space to work with; as should be visible in Figure 4 the whiteboard continued to be needed for day-to-day use. This resulted in the whiteboard becoming muddled as the space had to function for several things at once. It was visible, but it was not clear. Although the physical aspect was appreciated, the system did not function clearly.

This particular visible charting system failed for us for several reasons, but can all arguably be boiled down to ownership in one respect or another. Although there was a high feeling of ownership over the code and product within the team, the lack of clear understanding and involvement on the part of the team led to a lack of personal ownership. There was a lack of ownership of the chart system - and a lack of clarity as only half the company was involved in this project. This was compounded by the lack of space to work within - the chart was visibly unclear, and maintaining it involved going all the way round the long desk for some, just leading to greater distractions for other team members.

“It broke up my concentration, and I actually ended up backtracking a few things. So I actually took all the cards from the board which were mine, kept them on my desk, and put them up when I had done a load of them. Which isn’t the way to do it.”
It wasn’t helped by the fact that:

“They weren’t user stories in the first place. ... I don’t think they worked, I don’t really understand how they worked. I don’t think we tried them very well. ... I don’t think we gave them a fair chance. We gave them a chance, but it wasn’t much of a fighting chance. We shot them in the foot and then wondered why they weren’t running away.”

“I don’t think we understood it. The way that we understand projects and the way that we understand tasks. I don’t think that they were necessarily allocated to a specific card. ... It was kinda like this is related to this, is related to this, and so I’m doing these two at the same time because they are both related. ... I really like the idea. I can see how it would work, I think its just the initial bit of putting the tasks on the cards that I haven’t quite understood.”

“We had cards. We tried them. We didn’t do them really. We didn’t do them properly at all. But for some reason we kept on with it. ... Maybe one day we’ll try it again, properly.”

Although we do not know whether this final aspect of the Informative Workspace will work for us we are willing to try again with a bit more clarity. The visual aspect was appreciated and other, smaller, charting systems for tracking time and work have since proved useful, but in the case above we just did not own enough space to work in. In order to use a card system again we would need to rethink our approach to include more developer involvement in the card creation process, to make them feel more enabled, involved and adult, as well as integrating a clearer process to break up the context of the cards away from arbitrary overlapping features. We would also need more space in which to own the process.

“I would like to see who’s doing what a lot more visible than it is now. ... I don’t think we have that. I think it’s not so much for information purposes, although it may be useful occasionally, I think it’s just more a question of ownership, the fact that people should feel a bit more responsible for their deadlines and what they have to do. ... I think the card system could be one way of delivering that, whether it’s the best system I don’t know.”

5. Conclusions

Visibility in a workplace is a good thing, and in all cases these practices reflect it. Visibility is good for us for communication, understanding and information transfer. However, there is a single theme which spreads through our experiences with implementing all aspects of the informative workspace: the importance of control and ownership of the environment.

Firstly, while open plan is good it does have its drawbacks; such offices only work when you have control over the environment that you are in. If you don’t have control or ownership of the environment you can be limited and constrained in the space by other factors. The number of people in close proximity also plays an important role.

These factors also impact on feedback devices - in a shared open-plan space a device which makes noise is not always ideal, other people do not wish to have such information pushed to them. We learned how to optimise the output of the device in order to produce something which provided just the right amount of information without encroaching on others.

In the same vein, if your space is restricted then chart systems may not fit within the space, may end up forced or cramped or, even worse, may be opposed. It may end up visibly confusing, or even hard to get to without disturbing others. Control and ownership of the workspace is vital - just as personal ownership of any card system is key - otherwise such practices will not fit, both in the team and outside it. We have learned that visibility is useful, and physical can be good, but only when implemented in the right way and in the right place. Our experiences led us to acquire a portable whiteboard and flip chart which has since proved invaluable for charting and making visible our work without imposing on others. Although the system has not yet been retried, it has led to other chart systems being put into place which have helped us greatly.

Finally, the future seems positive, for some of the team at least, as:

“We’re moving in to a new room, where there won’t be a radio. We’re moving in to a new room, where there won’t be a hundred-thousand people. There will be five of us, in a small quiet room, where we can control the atmosphere, where we don’t have to check with other companies. ... I might put a poster up.”

References