CHANGING TIMES

Quality for Humans in a Digital Age

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Chapter Three: Things to do

"We're all busy people. We all have things to do, but it's important to be here for the start of the meeting. In our work, we can't afford to be late because, as I think I've mentioned before, news doesn't sleep."

Jonny Wilson's catchphrase prompted a groan from some of the gathered writers who made up the *Sydney Times*' Sports desk. Kim noticed that Andy, the junior who had arrived a few minutes late and prompted Jonny's comments, was looking down at his feet, no doubt feeling a little self-conscious but also perhaps suppressing a smile at the reaction to Jonny's comments.

Jonny was the Sports Editor and, in part due to his close relationship with the

paper's editor, he was a prominent person at the *Times*; part of a small group who had inside knowledge of important management decisions and the strategy of the owners. His fondness for making jokes, coupled with a self-confidence which he didn't always remember was not shared by all those around him, could sometimes lead to insensitivity in the way he dealt with others. One evening over drinks with the team, Kim had spoken to him about this, and he had promised to try to rein in the wisecracks, and to avoid giving people a hard time in front of their colleagues. Clearly, he needed to try a little harder.

Kim got on well with Jonny, and generally enjoyed working with him. They were around the same age and had been working together for a couple of years, after he had come to the paper from an Auckland-based daily. He had a quite different style from Norman White, the previous Sports Editor. Where Norman was interested in details, sometimes drawing criticism from the journalists for micro-managing their work, Jonny liked to keep his involvement to a minimum. In his own words, he liked to "steer things" or "point people in the right direction". He had a knack for reducing complex subjects to short statements or comments.

Sometimes this worked well and other times people longed for more information. Kim liked the freedom which came with Jonny's approach, but sometimes wished for a little more clarity about what he actually wanted.

As usual, his weekly update covered a few of the previous week's highlights: mentions for stories which had been favourably received or had generated a reaction in social media – along with some ideas for stories which might take the spotlight in the coming days. This week there were also two items of general interest: a vague update on the technical problems that had affected the system they used for submitting articles ("they'll get it sorted this week"), and a brief summary of the circulation figures which had been reported the previous day ("pretty crap").

The weekly meeting was different to the daily editorial meetings where they talked about which stories would run in the paper and online, and how prominent they would be. During that meeting, the writers often pitched ideas for feature stories which could run alongside breaking news and sports results. Those discussions were usually interesting, but the more mundane weekly ones often caused Kim's attention to drift elsewhere. On

this occasion, her gaze was drawn towards the view of Darling Harbour and a fond but patchy memory of a drunken evening spent on a harbour cruise. She was brought abruptly back to the here and now by Jonny's voice.

"… so, Kim and Ian, I'd like you to come along, please. Can you both make it?"

"No problem for me," replied Ian

Unaware of when and where her presence was requested, but keen to avoid admitting to daydreaming, Kim bluffed an answer. "Yes, that should be fine. I'll just double-check my calendar after this."

Jonny gave her a strange look, perhaps realising that she hadn't been listening, but he managed to resist the temptation to make a joke at her expense.

Once the meeting was over, she asked Ian what Jonny had been talking about.

"It's a meeting this afternoon with a company called AI-Bel who have some software which he wants us to look into," he explained. "I don't know too much more about it. Where had you drifted off to, anyway?"

"Oh, I don't know," replied Kim. "I was just thinking about something. You know how it is in Jonny's meetings."

"I do, only too well. Don't worry about it. I'm not sure Jonny really noticed,

and we've got some time to look into it. I'll find out what I can and we can talk it through. Coffee and a chat later?"

"Sure," Kim replied, smiling at the way Ian slipped into his supportive, mentoring role. "We can catch up before the meeting."

Kim found a workspace in 'The Stadium'; an area of the office with a few banks of hot-desks for sports writers to use. When the office space had been rearranged, someone had come up with the idea of naming the different areas according to the kind of stories which the people who would be sitting there worked on. The Finance writers worked in 'The Pit', named after the old trading pits of Stock Exchanges, the political writers were in 'Parliament', and so on. It was intended to be fun but some of the old-school journalists found it puerile. They also resented losing their allocated desks.

Kim connected her laptop to the screen on the desk. Mercifully, there were no operating system updates to install so she was soon ready to start work.

Unfortunately, her mind was racing, with different thoughts swirling around and competing for attention; not all relating to work. If she was to get into the right frame of mind, she needed to

eliminate some of the distractions.

She formed a mental to-do list.

There was some preparation to be done for the meeting with AI-Bel, but she could leave that until she caught up with Ian just before they went in. Better for them to go through it together.

Then there was the confusion over the electronic ticket on this morning's bus journey to sort out, and those emails which she had been looking at over breakfast. The one from Chloe Clark had been important, so that seemed a good place to start.

Chloe was Editor of an independent magazine in the UK called *Two Halves*. It was a well-established publication which had been running for over twenty years and had a growing audience subscribing to an online edition. The magazine focused on football and, where it had once been devoted to the clubs and leagues in the UK, it now featured many stories relating to the global game.

Kim's friend Paul worked for the magazine and it was while she was staying with him during her visit to London the previous year that he had floated the idea of Kim taking up a role with the magazine. He had spoken to Chloe, who had seemed keen to bring Kim in.

At first, Kim had dismissed the idea,

being reluctant to consider leaving a large daily newspaper for something which she considered less prestigious. She didn't tell Paul this was the reason, instead saying that she wanted to continue her involvement in a broader range of sports.

Over the last couple of months, however, she had started to give it serious consideration. Some of the changes at the *Times* had led to a strained atmosphere, with growing resentment of the new generation from the older hands. The circulation figures were a constant source of discussion and there had been rumours that the owners may even consider becoming an online-only publication. Not that this in itself troubled Kim - she was familiar with modern digital editing and publishing methods, and generally felt positive about the new ways of working. But the uncertainty at the paper was making people feel unsettled and morale was low.

So far, Kim and Chloe had only been in touch via email but Kim had agreed to have a video call with Chloe, to see what she had to say about the magazine and what kind of work might be available. Kim's working theory was that they might need someone to report on the leagues in Australia, also to write feature articles

on the growth of the game in this region. Chloe seemed interested in the work Kim had done with the *Times* website team, and in her activity on social media sites, as much as in her writing. Maybe they wanted to grow their digital presence and expand coverage in Australia and Asia.

Chloe was very keen to have the video call and was pushing for this week. As Kim looked at her calendar she saw that, as usual, most of her evenings would be busy with interviews or attendance at sporting fixtures, but Thursday night was an exception. Kim replied to Chloe, suggesting that they talk at nine o'clock Sydney-time on Thursday evening, which would be mid-morning in the UK. She also sent a short email to Paul, asking if he knew anything that might be useful for Kim in advance of the call.

With these two messages sent, the next email caught Kim's attention - the reminder from OzTelia, the phone company. The bill was paid but there was still the Direct Debit to set up. She clicked on the link in the email and a web browser window opened.

It seemed as though setting up a Direct Debit should be a relatively simple process but the website was apparently created with a secondary purpose as a kind of psychological test. She remembered a

lecturer at university who had showed them something called the 'Five Room Puzzle'; a challenge where you were shown a plan of a house with five rooms and asked to draw a single continuous line which crossed each of the walls just once.

It was an ingenious, devious device, intended to frustrate, and ultimately to force the students to accept that there was no legitimate solution. For a group of smart people who liked to solve problems, this was not easy. It was, however, perfect preparation for the experience of using OzTelia's website.

Much like the puzzle, it had looked deceptively easy at first. The section of the website for Direct Debits gave a choice of options: Setup, Amend, or Cancel. Selecting the first of these led to a login page with some instructions about what to do once she had logged in. Of course, once she had logged in, the instructions disappeared, which made things a little complicated.

Kim opened another tab in the browser and found the instructions again. Unfortunately, the words and pictures which described the account page and the steps to follow were very different to what she saw on her own screen. There was no sign of a link to create a Direct Debit anywhere but there was a little picture

of the company's mascot; a kind of cartoon mobile phone called Ozzie, which she remembered from their TV ads. Ozzie had a little speech bubble saying: 'Need help?'. She most certainly did.

When she clicked on the picture of Ozzie, a 'Support' page appeared, containing a long list of possible topics to read. There was no time to read through them all but the page also had a place to search for a term so she typed 'Direct Debit' and hit the button. A picture appeared of Ozzie riding a bike, with an animated spinning circle around him and the words 'Working on it...' underneath.

After a few seconds, a familiar sight. The search had taken her back to the page with options to Setup, Amend or Cancel; the same place where the process had started. This was no help at all. Surely it was possible to talk to someone instead.

After a bit of digging around, Kim found a page called 'Getting in touch with us'. It looked like there were different paths to follow, depending on what you wanted to talk to them about. One of the options was Billing, and this led to another list of choices. About halfway down that list she spotted 'Setting up your Direct Debit'. She selected it.

After a short interlude during which

Ozzie once more appeared on his bike, the screen showed those same three options: Setup, Amend, and Cancel. It didn't seem to matter what she did. It was her destiny to return to this page.

Suddenly, a box popped up on the screen:

>> Hi, this is Jim. Can I help you with anything today?

She'd seen this sort of thing before; a kind of chat support where they tried to help you without actually talking to you. Ian had told her that they were not real people she was chatting with but some kind of automated response system. It was worth a try:

>> Hi Jim. I'm trying to set up a Direct Debit but I can't work out how to do it

A short delay, then:

>> I can help you with this. Who am I chatting with?
>> My name is Kim
>> Hi Kim. And you need help with a Direct Debit?
>> Yes
>> OK. There are three options for Direct Debits. You can Setup, Amend or Cancel. Which of these would you like to do?
>> Setup
>> Great. Can you please tell me what sort

of service you have with us. Mobile, home phone or broadband.
>> Home phone and broadband
>> Is this an ADSL or Cable connection?
>> I'm not sure… Cable I think
>> Unfortunately there is no facility for setting up Direct Debit online for Cable customers. Please call us and we can set this up for you over the phone.

Kim closed the chat window in frustration. What a waste of time. Why send out an email telling her to set up Direct Debit online if she couldn't do it, and why didn't the website tell her which customers could or couldn't do it? Now she would have to try to find a phone number to call them and would probably have to sit on hold for twenty minutes. Maybe another day.

   She felt a little guilty about shutting down the chat with Jim mid-conversation, but if Ian had been right and Jim really was just a robot then she probably hadn't hurt his feelings too much.

Empathy: the essential ingredient

If you use technology, there is a good chance that at some time or another you will have had a similar experience to Kim. Carrying out a seemingly simple task – in this case, setting up a direct debit for a phone bill – is thwarted by a website which has been designed and built in such a way that the task becomes prohibitively difficult.

The frustration Kim feels is largely down to the content of the site, and the poorly defined links which repeatedly send her back to the same page. But when she finds herself in difficulty, she also feels unsupported. The site's support pages are no help whatsoever and the chat system, whilst finally providing some kind of explanation, does little to improve Kim's mood (or her impression of the website and the company). She notices some of the visual elements which have been included, perhaps in an attempt to enliven what might be rather mundane activities, but animated pictures of cartoon mobile phones do not compensate for being unable to do the thing you set out to do.

During her efforts, Kim is reminded of an unsolvable puzzle and sometimes it can indeed feel as though these sorts of difficulties are the result of some cruel trick; a deliberate attempt to frustrate us through the use of deception and misinformation. It would be an

unusual (and probably unemployed) designer who set out to create such a troubling product. Poor experiences are less likely to be by design than the result of errors, bad decisions, poor management, or a combination of these.

Perhaps Kim has little option but to continue using OzTelia's products and services, regardless of how ineffective they are. It might be that they operate in a market with few competitors and have little incentive to change or to think about how people will feel when they use their products. Kim's experience suggests that, in the design of their website at least, the company has not shown the care and consideration their customers would hope for.

In this section, we will explore how empathy – the ability to see things from another person's perspective – can help people involved in product development to consider the people who use those products, and help companies like OzTelia create better experiences for their customers. We will look at some of the techniques used in software development which have contributed to an empathy gap, and some methods which have been adopted in an attempt to close that gap.

A lesson from history

During my teenage years, I was given a lesson in the power of empathy. My family had moved to a new city and I had moved to a new school. It was an important time for me in many ways, not least of which was my

education. I was about to enter the last two years of schooling, the period when my marks contributed to the final grades I would receive.

Whilst some of the subjects I would study were mandatory, I had the opportunity to elect others. The selection mechanism meant that I had to decide between subjects from various groups: two from the Sciences, one from Humanities, and so forth.

My criteria for deciding were not entirely logical and dispassionate. A bad experience with dissection of frogs meant that Physics got the nod over Biology, and a particularly tedious lesson in rock formations probably edged out Geography in favour of History.

History was not a subject which I had shown any great interest in, or aptitude for, up to that point. This changed during our first lesson with my new teacher, when she explained her teaching philosophy to the class. In particular, she emphasised the importance of empathy, which she said was central to the way we would learn. She even wrote the word on the blackboard in big letters to help us remember. It certainly stuck in my mind.

Our teacher went on to describe how we could better understand the events we would learn about by placing ourselves in the position of the people who witnessed them, or in some cases by hearing from those people.

The subject matter was the Second World War, and over the following weeks we watched several episodes of the documentary series *The World at War*, produced in the 1970s by Jeremy Isaacs.

This was a landmark documentary series, and perhaps its greatest strength was its ability to provide an insight into the experiences of the people who lived through the events leading up to the Second World War, how the conflict affected their day-to-day lives, and the consequences for them in the years that followed.

Interviews were used as a technique to capture their recollections but also, crucially, their emotional responses. We could see the pain in their eyes and hear their voices breaking. We could begin to comprehend the sadness and despair of victims, or the guilt or defiance of perpetrators of violent acts and unspeakable atrocities.

As a student of this period of human history, I was immediately captivated by the idea of putting myself in the shoes of these witnesses. Hearing their voices and stories, and seeing how they were affected, was a world away from my previous experience of History lessons; endless lists of events, dates and numbers, and little more than a memory exercise.

Which year did Charles II become King of England? When was the Magna Carta signed? How many troops were involved in the D-Day landings? These are things which I was taught but which I could only now answer after a quick Google search or a visit to Wikipedia. But ask me how the Allied soldiers *felt* as they arrived in landing craft on the beaches of Normandy in June 1944 and I can tell you that they were terrified of what lay in wait, but elated to be leaving the small vessels which had been tossed around on the English Channel

during the crossing. Some were simply happy to get back on dry land, despite the dangers ahead. I remember this because I heard it from those who were affected.

Facts and figures might not convey real experiences but hearing people's stories connects us to them. Their feelings and emotions foster empathy, and help us to understand their responses.

Quantifying Quality

If stories and feelings tell us more about human responses than cold facts, dates and numbers, this might provide a clue as to why software development teams, and the organisations they work with, sometimes struggle with the question of quality.

In this field, refuge is often sought in numbers. As discussed earlier in the book, it can be challenging to reach an understanding of what quality means. Perhaps in an attempt to make this task simpler, to reach a consensus among those involved, there is a tendency to attempt to quantify quality.

By setting numeric quality targets - sometimes called exit criteria - a desired state can be agreed upon; a point at which the product is deemed good enough for whatever follows, including whether it is ready to be released to customers. The numbers act as a comforting security blanket, creating a sense of control. Even if the picture they paint is troubling, at least they provide a means of seeing that picture.

Unfortunately, whether the picture is troubling or

not, it may well be a misrepresentation. Common metrics such as counting test cases passed and failed, or counting defects, are unreliable, given that they rely on equivalence (each item counted being of the same value or significance) and ignore subjectivity (what you consider acceptable, I might consider unacceptable). They are also very limited representations, excluding crucial information which is not, or cannot be, counted. For example, a count of test cases does not represent all the testing which occurs as it excludes exploratory or investigative work beyond the narrow confines of those test cases, and a count of defects excludes problems found and fixed without ever being recorded. Not to mention that the numbers tell us nothing about aspects of the product which have not been tested, and problems which may yet be found.

Quality is not measurable in the way cost or time might be measured. If we accept that quality is subjective and variable, how can it be a fixed attribute which can be counted? Cost can be measured in units of currency: dollars and cents, pounds and pence. Time can be measured in units of hours, days or weeks. There is no such unit of measurement for quality.

This is not to dismiss metrics entirely. Whilst they cannot be treated as absolute measures of quality, some can be useful and a range taken together can, if treated with care, be a helpful tool in identifying patterns and potential problems. I have myself spent time carefully preparing reports containing metrics

(including those mentioned here), thinking such reports were helpful. To an extent they were; however, their value lay not in the numbers but in the conversations which they triggered; about what the metrics really told us and, crucially, what they did not tell us. These discussions with people who had an interest in the quality of the software (especially those who made decisions about whether software was ready to be released), whilst more challenging than simply pulling numbers from a spreadsheet or a database, required an understanding of the story behind the numbers and what the implications might be for the people who were going to use the software.

As difficult as it might sometimes be, the less time and effort spent trying to quantify quality, and the more spent talking about quality, the better. Numbers might tell us *something* about products, but not *everything*, and metrics; even combinations of metrics with clear patterns, offer no guarantees about the impression customers will form of technology. As I discovered in my History lessons, and the conversations triggered by my work reports, storytelling can be far more effective in understanding human responses and how others see things.

Mind the gap

The connection which stories can create helps us to address the empathy gap which can occur when one party is unable to understand how another party might feel in a given set of circumstances. Such a gap can

easily occur in the development of products such as OzTelia's website; internally, between those working together, and externally, between those people and their customers.

When there is pressure to deliver a new product, or to make important changes, we may lose sight of the pressure that colleagues are under, perhaps becoming critical of their decisions or efforts. This can be exacerbated when there is miscommunication and misunderstanding around the objectives of the work, the business benefits, and the judgement of what matters to customers.

That judgement may be flawed if customers have not been consulted, or techniques applied which help capture their point of view. Understanding who customers might be and how they could get value from a product is crucial in the quest for quality.

It is worth emphasising that this does not mean that customers always know best when it comes to designing products, or that radical and innovative thinking on the part of product designers cannot lead to wonderful, useful and valuable products.

The importance of innovation in providing people with something they come to value can be seen in products such as the Ford Model T and, a century later, the iPod. Yet these famous inventions were not borne from a conscious effort to bypass customers or a feeling that designers knew best. Quite the opposite, in fact - they resulted from a deep empathy with real people, the problems those people faced, and how their lives could be improved.

Henry Ford recognised that people wanted a fast, affordable, and maintainable method of transportation. He knew that families and individuals alike would relish the opportunity to own a car like the Model T and he also understood the freedom which it represented.

Apple, where Sir Jonathan Ive designed the iPod, knew that people wanted a portable means of storing and listening to music; something which had capacity for their music collections but which was lightweight and simple to use.

At Apple, the freedom to experiment and innovate came from the top of the organisation, and an understanding that great products can result from thinking about customers first. At a presentation to a large group at Apple's Worldwide Developer Conference (WWDC) in 1997, Steve Jobs, the company's CEO explained his philosophy:

"One of the things I've always found is you've got to start with the customer experience and work backwards to the technology… What incredible benefits can we give to the customer? Where can we take the customer? Not start with 'let's sit down with the engineers and figure out what awesome technology we have and how we are going to market it.'"

This attitude probably helps explain, in part at least, some of the achievements of that company over subsequent years. It would be wrong to suggest that

Apple always get things right but, when they do, they design and build spectacularly successful and popular products which many of their customers love.

Degrees of separation

It isn't always easy for those who work on the development of technology to empathise with their customers, particularly if they have little direct interaction with them. Whether by accident or design, opportunities for development teams to interact directly with customers can be scarce. In 1929, the Hungarian writer Frigyes Karinthy described the theory of 'Six Degrees of Separation'; the idea that any two people can be connected to each other through a chain of six or fewer steps. In software development, it can sometimes feel as though those degrees of separation are actively maintained between customers and the technical people working on products for them.

Instead, techniques and methods have been used which are intended to bridge the gap; to capture what those customers want, to distil and refine these desires and to relay them to technical people.

For many years, the dominant method used in software development was written requirements, captured in documents which were often extensive and weighty. The premise that these documents accurately capture the needs and desires of customers underpins this method. The theory is that through requirement document reviews and rework it is

possible to reach an accord on what a product should be like; how it should behave and operate. The documents can be passed on to those tasked with building, testing, supporting and maintaining the product and a shared understanding can be reached.

Following this approach means that those people need not concern themselves with why this work is required - technical people can instead focus their energies on what they are building and how to do it. This way, customer empathy is lost. Concern for adherence to process overtakes concern for what people might actually want. If the product is built in such a way that it does what the requirements state, and if it can be demonstrated that it does so, then (so the theory goes) it will meet the needs of customers. Unfortunately, the reality is often quite different.

It is not difficult to imagine that this kind of approach might have been adopted in the development of the OzTelia website which caused Kim so much frustration. There could have been an extensive exercise in gathering, documenting, reviewing and reworking requirements. These requirements may have been translated into technical specifications and passed on to development teams, who were asked to build the different components of the website according to those specifications. Testers were very likely asked to do little more than confirm that what had been built conformed to the specifications. Little consideration would be given to customers like Kim, or their experience whilst using the website (although there would no doubt be some

metrics which would reassure everybody involved about the quality of the product).

The consequences of relying on written requirements can go further than the effect on customers. Requirements can be ambiguous and inconsistent, and can be interpreted differently by different people. They may not even feel that they have the time (or inclination) to properly read and absorb them. As work on the product continues and new information or ideas come to light, the requirements can change. Misunderstandings occur and cause inefficiency as people attempt to reach a consensus. This in turn causes delays and inflated costs, which can result in projects being abandoned. If a product is ultimately delivered, often later than planned, it may be a product which:

- Fails to capture what was intended in the first place.
- Has taken so long to produce that it is no longer wanted or needed.
- Has been beaten to market by a rival product.

For public sector organisations, such an outcome can lead to poor services and great costs for taxpayers, embarrassing political failures, inquiries and investigations. In the commercial sector, a poorly received product can be the difference between a company's success or failure, perhaps affecting their value, share price, reputation, the jobs of people working there (whether they were directly involved in

the product development or not) and, in some cases, the continuing existence of the organisation.

There are numerous examples of failed technology projects which were either cancelled or subject to lengthy delays and huge increases in costs. In a climate where schedules are likely to be missed and costs spiralling out of control, a 'blame culture' can emerge. Consideration for how a product will be received can slip down the list of priorities. People will be more interested in putting themselves out of the firing line than into the shoes of customers.

Naturally, those whose ideas and business strategies instigate work on such projects, and those who control the budgets associated with these endeavours, have asked whether there is a better way to deliver products and change. Frustrated and unfulfilled technology workers have asked the same thing. After all, there is little pleasure in working in an environment of confusion and blame, where goals are not achieved and customers and clients are dissatisfied.

From these frustrations and questions, from a recognition that large complex releases have not always been in the interests of many organisations, their employees or their customers, the methods associated with Agile and Lean development have emerged and proliferated.

Closing the gap

As we covered earlier, Agile and Lean practices are intended to help deliver value to customers. In order to do so, there is a recognition that more effective methods are needed to address the separation of customers from the people working to develop products for them.

An example is the Scrum Framework; an approach which involves development teams working in short, focused sprints on features prioritised by a Product Owner. The Product Owner is the link between customers and the development team, defining the list of product features, and signing off on products when they are satisfied that the required work has been done. The approach replaces detailed requirements with more succinct User Stories, intended to explain who might want to use a product and describe what they might want to use it for.

The role of Product Owner is one which requires deep customer empathy, an intimate understanding of their needs and desires, and an ability to express these effectively. Because this model maintains a degree of separation between customers and the development team, the Product Owner's ability to communicate with both is crucial. If they are not effective in this regard, if they have not really understood customers' desires, then they simply become the mechanism by which those desires are miscommunicated.

A crucial element of the Lean approach, meanwhile, is the idea of a Minimum Viable Product (MVP), to be

provided to customers, or prospective customers, in order to obtain feedback and refine the product (or perhaps abandon it if feedback indicates that it will not ultimately be something which people want).

Feedback can be elicited in many ways. Examples include:

- Observation of customers using a product, the way it is used, and the responses and reactions generated.
- Monitoring of visitors to web pages where customers can sign up for a product.
- A/B testing, which compares reactions and responses to two different versions of the product.
- Responses provided by customers to support teams and other customer-facing staff.
- Customer interviews where people speak about their experiences, expressing what they liked and didn't like about a product.

This last technique demonstrates how customer empathy can be applied in a direct and meaningful way. There may still be hurdles to overcome in reaching a shared understanding with the customer, and in relaying findings to different people working on the product, but the methods make it easier for everybody involved to hear the customer's voice and to ask them about their responses.

Other simple and practical steps can be taken to foster empathy. For example, encouraging people involved in the design and development of

applications and websites to try using their product with a phone's accessibility features enabled, or on a computer with only a keyboard attached, can help them to better understand the experience for customers with visual impairments or an inability to use a mouse. Meanwhile, asking the people who develop an organisation's applications and systems to spend time sitting alongside colleagues who operate those systems allows them to observe how they are actually used, the features which are popular (as well as those which are ignored), and the problems caused by some aspects of the design.

Simple exercises such as these can provide designers and developers with real insight into what their work means for other people. Changes to systems, websites and applications can be made with those people, their needs, and the way they act in mind.

A final thought on the empathy gap. Sometimes overlooked is the simple fact that the people working on products are consumers of technology themselves. In some cases, they may use the very product they are working on in their day-to-day lives. If not, they are likely to find similarities between that product and other things they use.

These similarities could be in the way products look, how they respond to certain actions, how easy or difficult it is to carry out tasks, or how those tasks are supported. Knowing what they like or don't like, and what works or doesn't work well for them, can be a great benefit. It doesn't mean that their personal

preferences always represent the best path to follow but if something feels wrong, or their emotional response suggests a possible problem for customers, this is worthy of attention. It might just be the simplest way to bridge the gap.