HAPPENSTANCE

TECHNOLOGISTS IN RESIDENCE

caper LIGHTHOUSE Spike Island Site Gallery






The Happenstance techies Site Gallery: James Jefferies and Leila Johnston. Spike Island: Kevin Walker and Linda Sandvik. Lighthouse: James Bridle and Natalia Buckley.

MAKING THE ARTS DIGITAL BY DEFAULT

RACHEL COLDICUTT AND KATY BEALE, CAPER

Happenstance is about the potential of people, and about what happens when you put digital thinking at the heart of arts and cultural organisations. The Digital R&D Fund has allowed us to test a hypothesis: what would happen to arts organisations' digital capacity if they invested in the right kind of people?

After these first, relatively short residencies, we've seen transformative change in each of the host organisations, as well as in many of the residents. The emphasis during Happenstance has been on developing relationships, growing skills, and demystifying technology.

Based on the evidence of this pilot, we believe that this model can change the way the arts and cultural sectors understand and relate to technology by creating efficiencies, building digital literacy and uncovering new creative opportunities.

Happenstance grew out of the thinking Caper had been doing around Culture Hack, a digital development programme that we started in January 2011, based on the hack-day format pioneered by Yahoo! After a few successful events, we realised that a single weekend was just the tip of the iceberg: what would happen if we could extend the Culture Hack ethos into longer-term relationships and deeper understanding?

A typical Culture Hack now runs for around six months from kick-off, and the Hack weekend is the culmination of months of relationship building, data development and developer outreach. Culture Hack encourages arts organisations to open their data, understand its potential, and then work collaboratively to create prototypes. But in a way, it can only help to answer questions that the organisations know about.

As a response to this, we developed Happenstance with Site Gallery and Lighthouse as a way of reaching the parts that other digital projects can't. Rather than trying to use technology to fix a specific problem or answer a particular need, the aim was to see how technology (and specifically, technologists) could transform the arts. In a way, our aims were similar to those of the Government Digital Service: how could the arts become Digital by Default, rather than digital as an afterthought?

The first challenge was to design a viable programme that was attractive to both the host organisations and the technology community. Each of the hosts (Site Gallery, Spike Island and Lighthouse) are small in size but big in reputation, and we needed technologists who would be interested in, and sympathetic to, their work – not only ambassadors for them in the wider world, but good people to have in the office. We were looking for the sort you'd have professional confidence in, but also want to chat to in the kitchen or go out for a drink with after work.

It was vital that the technologists didn't feel like consultants who had arrived to tell everyone they were doing it all wrong; they needed to be a part of the team, and we needed to develop this relationships in the relatively short time that our funding allowed.

So we were looking for excellent digital practitioners with great communication skills and flexible working patterns: the sort of people who could drop everything and move to another part of the country, be generous with their skills and experience, and offer creative thinking and energy. And, after a short recruitment drive and matchmaking process, we found them: six great residents who entered into the project with commitment and energy and open minds.

The most important thing about Happenstance is that it doesn't assume technology is something that happens on screens. It doesn't bury it in an organisational chart, or assume that it belongs in the Marketing or IT departments. We believe that an organisation's digital strategy should pervade all areas of its work. Rather than being in a silo and expected to deliver in isolation, it should be a part of creative, artistic and operational planning.

Putting good digital thinkers in proximity with confident arts leadership teams has been a catalyst for all kinds of change. New business models, new relationships, different ways of working, growing understanding and enthusiasm, and visionary future planning have all emerged from this.

We can see that Happenstance also has application outside of the arts world, into the public sector and commercial organisations. And while the legacy will be different for each of the participants in the pilot phase, we hope the longer-term impact of the project will be a radical change in the arts and cultural sector embraces technology.

AN R&D EXPERIMENT

HASAN BAKHSHI, DIRECTOR, CREATIVE INDUSTRIES, NESTA POLICY & RESEARCH

The arts as a whole benefit when individual organisations experiment with new ways of using technology. There are wider lessons to be learnt: what helped, what didn't, what would organisations have done differently if they had a second chance. Unfortunately, the arts have not been so good at capturing these valuable lessons and sharing them as effectively as they might.

This is why we created the Digital R&D Fund: a targeted fund bringing together arts organisations, technology partners and academic researchers to experiment with new technologies. In the Fund's pilot in England we supported eight projects spanning artforms as diverse as classical music, contemporary art and immersive theatre. The processes by which these organisations have designed, implemented and managed their R&D is a common interest in all the projects.

Happenstance, by placing six creative technologists at the centre of three cultural institutions has taken this a step further and made the R&D process the subject of experiment itself. I am very much looking forward to hearing what other arts organisations grappling with new technologies make of the results.

SITE GALLERY

is the international centre for contemporary art in Sheffield. It aims to support new artists, new work and new audiences.

Site started life as an independent photography gallery in the Walkley area of Sheffield in 1978, and since 1995, it has expanded its programme to incorporate new and experimental digital and multimedia work alongside traditional image production. Site is committed to showcasing both emergent and established artists, often alongside each other. The gallery always strives to tackle contemporary debates and issues, and also supports the dynamic field of live art.

LEILA JOHNSTON

is a writer and broadcaster with a particular interest in the culture of technology. She is the author of the gamebook and iPhone app Enemy of Chaos and How To Worry Friends and Inconvenience People – which was turned into an interactive online animation series by BBC Comedy. In the last year she has been working on creative technology experiments for an agency in London, and writes regularly about hacking for WIRED UK.

JAMES JEFFERIES

has spent many years working with technology, as a software engineer, architect and consultant. Having worked for big banks, utility companies and digital agencies, he now runs his own company ShedCode based in Sheffield. Apart from geeky things, James is interested in industrial archaeology, transport, music, books and film.

SPIKE ISLAND

in Bristol is an international centre for the development of contemporary art and design. A vibrant hub for production, presentation and debate, it invites audiences to engage directly with creative practices through participation and discussion.

LINDA SANDVIK

is an interface developer and wannabe MacGyver. She's a front-end developer with a computer science degree, and has had her own consultancy business since 2009. Her work mainly involves web development, apps and physical installations with electronics. Linda is passionate about research, user testing, experimenting and prototyping. She describes herself as "curious and oddly creative" and likes exploring new things like "catapulting myself 1000 feet into the air".

KEVIN WALKER

is a designer, researcher, artist, technologist and journalist working across disciplinary and geographic boundaries. He designs and programs installations, software and websites, mostly for museums, galleries and artists. He also publishes research on how people learn with technologies and is an artist and compulsive journalist. Kevin's qualifications include a BA in Anthropology/ Mass Communications, a Masters in Interactive Telecommunications, and PhD in Museums & Technology.

LIGHTHOUSE

is a digital culture agency based in Brighton. It aims to support, commission and exhibit work by artists and filmmakers. The organisation works with digital art and moving image, nationally and internationally. By supporting artists and filmmakers, through commissioning, exhibition and professional development, they aim to demonstrate that digital culture is about more than technology and tools; it is about ideas, emotion, learning, and aesthetics.

JAMES BRIDLE

is a writer, publisher and artist based in London, UK. He makes things with words, books and the internet, and writes about what he does at *booktwo.org*.

NATALIA BUCKLEY

is an interaction designer and developer, interested in exploring the ways we interact with technology, and how in turn our technologies shape the way we live. In her spare time she plays with electronics, builds digital ephemera, does martial arts and drinks cider. Not always all at once.

CREATIVE CODING

JAMES JEFFERIES

Creativity is just like a tap, right? You need to do some thing a bit 'woo' and a bit 'wah', so you switch on the creativity tap and all these incredible ideas just pour out of your brain. There are two dangers to the creativity tap, though.

One is that if you leave that tap switched off for a while, then all the creativity gets stored up in your brain, without an outlet until... Pop! One day it's gone! Those ideas had to go somewhere, so they leaked out, usually somewhere behind your ear, hopefully picked up by someone else. You have writer's block, coder's deadlock.

The other danger is that you leave that tap switched on all the time until your brain empties. This is a bad idea. Sure, you've made some room in your head for new things, but you need a few left in there, to keep the ideas factory ticking over.

Knowing songwriters, I get the privilege of seeing the life cycle of songs. Some end up being recorded and performed, some mutate into a different song, some end up left on the shelf for another day. The writers I know have to *work* at honing a song. They rarely appear fully formed, but often start to reveal themselves when there is space in their lives to switch on the creativity tap for a bit, to see what happens.

If they don't have the chance to get the songs out, then you can see how their ideas start to play merry hell. The frustration builds – it's almost a physical pain, the song has to be brought to life. There is a creative imperative which must be fulfilled.

Fortunately, for us software engineers, tapping at our keyboards day by day, telling the computer what to do and when to do it, we don't need the creativity tap. We get stuck? We ask a search engine.

We need to do something from scratch? Well, someone will have done something like it, we just need to find it and copy them. We need another pair of eyes? Ask a colleague. It's all there for us, if we use a clever framework or development environment, and it'll probably autocomplete what we're thinking too. We are coding machines.

Or are we? Having spent many years writing code, I started to realise that when I was mechanistic in what I was doing I became frustrated that I wasn't able to come up with new ideas, or ways of doing things. I was constrained by getting this piece of work finished in as short a period of time possible. No time to switch on the creativity tap – just get it done.

When you work for someone else, you can find yourself under a lot of pressure to crank the sausage machine handle rather than think things through. I worked with an engineer once who would deliberately stop what he was doing and just think. Rather than thrashing through a jungle of code, stop first and think. And it worked.

I struggled in my day to day job, so I tried to make time in the evenings and the weekends. But you're so tired then that switching on the creativity tap just floods you with ideas that you don't have the energy to either make note of or do anything with. Like the frustrated songwriter I would feel the pain of not learning new skills, not playing with languages and technology. Not actually making anything which would cause me to say, even to myself: "I made that and I'm pleased with what I've done".

So, what can be done? In the workplace, where people have a pressurised job and a boss, one solution is for the people in charge to give employees time and headspace to play. They can play with their work by writing something new. They can play with wooden blocks or with a great idea they've had. Give them space to exercise creative thinking, and their work feels the benefit.

If you are your own boss, plan in time where you put down the work you're doing for clients or your startup, and have a play. You never know what amazing ideas might come to life.

MAKING ARTS ORGANISATIONS AGILE

NATALIA BUCKLEY

Generally speaking, tech companies make the effort to investigate and reflect on their own processes. Often this results in exciting ideas that challenge the traditional ways of running organisations. At GitHub there is pride in the lack of managers, or, as Ryan Tomayko puts it, the fact that "everyone at GitHub is a manager"; "each responsible for managing a single person: their self".

Valve has no formal corporate structure. Everyone can pick what project they work on, so the desks are furnished with wheels for setting up impromptu temporary teams. Decisions are made by getting enough supporters across the company who will want to work on the specific project. Their employee handbook describes exactly how it works, and it's a fascinating read.

But there is a philosophy that at first doesn't seem quite as radical, though it seems like the entire software making world is practicing it: the Agile philosophy. I can quote the entire Agile manifesto in here, it's this short. We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.

Happenstance was supposed to help consider was whether any of the Agile philosophy of making software could be useful to arts organisations. Obviously, there are many differences between the ways in which software and art are made. The biggest difference is probably in the way they are funded – arts funding is mired in bureaucracy, paperwork and reliance on relatively few bodies, who can grant money to projects that fit within their goals and agendas.

For a while I was wondering whether the Agile approach is even useful – Lighthouse is a small team working in the same room. Most of the work they do is about strategy, planning and managing, rather than making things. But as I kept it brewing on the back of my mind I realised that the agility comes from a specific culture within the organisation and has relatively little to do with making things or technology. The idea that face-to-face conversation is the best way to convey information surely applies outside of the software-making world. Agility comes from not fearing change or small mistakes and learning to respond to them quickly and efficiently. It's about responding to change.

I gained enough trust among the team the Lighthouse to be able to propose anything and that they would at least try it out, knowing that I've got their best interests at heart. So I decided to give it a go, and completely banned email as a means of internal communication. Now, obviously I have no way of of checking up on everyone, but judging from the feedback and the amount of work-related discussions that are happening in the office, they decided to follow it.

I also introduced daily 'stand-up' meetings, where we very briefly described what we were working on the previous day, and what we're going to be doing today. Somehow the format stuck and we described what we did on days off, too! It's actually really nice to be always in the loop, and occasionally hear a funny weekend story. It made me realise how much everyone does – all the boring bits: catching up on emails, reviewing things, etc, that even Offbott doesn't always hear about.

SITE GALLERY

THE TECHIES

We started out on this project with three goals: to help with specific solutions for Site, to inspire the organisation by demonstrating what's possible with technology, and to help connect the gallery to the local technology community. In the end, I think all that happened and much more.

We spent the first few weeks in the Directors' office, which was great in a way as it meant we felt really embedded really quickly, and were made to feel like part of the family. There were a lot of immediate things that we could see we could help with – particularly as their new tech support wasn't due to start work for a few weeks. One of the directors was carrying two laptops around with her because one had enough memory and the other had a working battery. We cleared some memory by deleting Garageband! Even better, we helped them to make sense of their priorities by showing them an agile to-do list type program called Trello.

After a few weeks of this, though, we started focussing on how we might be able to inspire the organisation through our own skills and passions. We ordered in two prototype internet receipt printers, which we named Cathy and Heathcliff, and a highlight for us was working with the Directors to incorporate them in a Bill Drummond exhibition. The printers developed little personalities, with Heathcliff having adventures all around Sheffield, and Cathy taking up permanent role as a robotic receptionist.

THE ORG

Arts organisations have a role to play in developing new ways of thinking and new ideas, and supporting the development of new practices that don't necessarily exist yet.

LAURA SILLARS, ARTISTIC DIRECTOR AT SITE

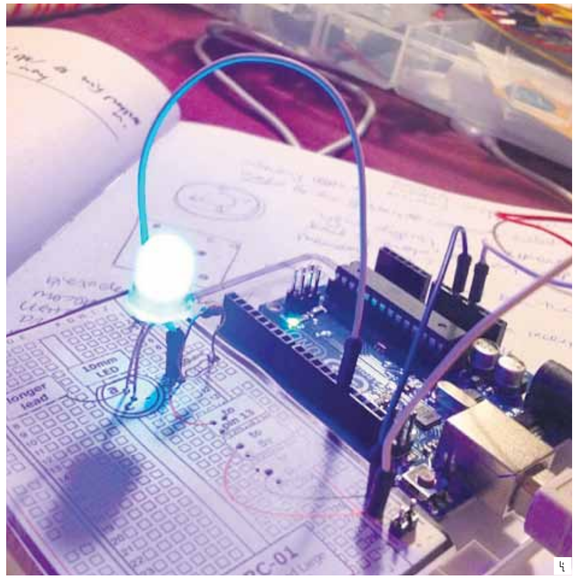
Happenstance has enabled the headspace, the time, a place to think and explore to really start to take advantage of what's out there, to start to realise things are possible to achieve rather than over the horizon.

JUDITH HARRY, EXECUTIVE DIRECTOR AT SITE

Usually projects have a prescribed brief and outcome, and we as researchers would simply be evaluating whether that objective has been achieved. This is much more open. This is like – throw some things together and see what happens. It's very rare to have that kind of open-ended process and I think everyone's really benefitted from that looseness, allowing the thing to evolve, allowing people to experiment and see what comes out. The legacy of the project will be stuff they've made, but more importantly the legacy will be different ways of thinking.

CHRIS BILTON, WARWICK UNIVERSITY

Tweet from @sitegallery @cathyprints Are you alright down there Cathy? Cup of tea?



1/ James Jefferies experimenting with Bare conductive ink
2/ Leila in the Directors' office
3/ Heathcliff nyanned for 39 seconds
4/ An arduino starter kit boots up
5/ A friendly robot that emerged from the polargraph
6/ Aiden Davies
7/ James Boardwell

Tweet from @FinalBullet
Our #polargraph has arrived from Scotland, via its inventor, @uptomuch!

THE MENTOR

Having relationships with objects seems an odd idea yet we have relationships with things everyday. It's what galleries and exhibition spaces are predicated on – creating a relationship between audiences and artists' work. The work that Leila and James explored with their Happenstance project played with how this relationship between audiences and things could evolve. Why does this matter? In a world where attention is scarce, making sure that the attention you're after is good attention can be the difference between visitors and no one noticing – with 'art' being ghettoised. Commerce hooks you in with personal deals and online services increasingly revolve around personal "recommendations" for content. But what about galleries?

Cathy and Heathcliff, two thermal receipt printers connected to the thoughts and reactions of peoples' brains (via text message and twitter), were a wonderful, playful way to think about how to connect with audiences. For me their effectiveness was in the conversations that happened, the "what if" as much as the text spat out on paper.

It opened up the Site Gallery to think about other ways to engage with their audience beyond the art work itself. The tie-in with the names of characters in Bronte's Wuthering Heights helped people to grasp the idea that objects can be much more than how they appear and what they do. They can have personality and presence.

Happenstance created a whirligig of interesting ideas and conversations amongst different people, people who wouldn't ordinarily come together. The effects of this may not be obvious and tangible, yet. But Cathy and Heathcliff have already been mentioned in projects I've been part of by people excited by the possibility of what could be done. That's good.

JAMES BOARDWELL, CO-FOUNDER OF FOLKSY

THE COMMUNITY

As someone not connected with the Sheffield art scene in any way, the first thing that struck me about Happenstance was how the addition of two technologists has opened the gallery up to a potential new audience of people like me. My second thought was 'I wish I could employ a couple of creative technologists to come and look at the industry I work in from a whole new angle, help connect it to a new technology-focused audience, as well as show the people working in that industry what is possible'. A lovely Happenstance for Sheffield.

ADEN DAVIES, HSBC R+D

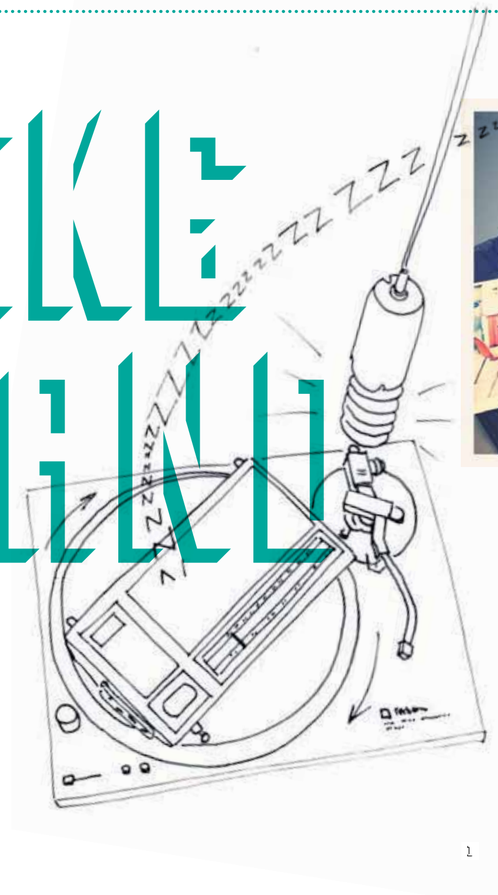
"Before Happenstance I was working full-time for a digital agency in London and felt my creative technology efforts weren't being given the time they needed, so it was amazing to have the freedom to work on some of the things I've been wanting to look at for ages. As well as helping the gallery, we were able to try out lots of stuff we'd never have had time to ordinarily – conductive ink, drawing robots, Kinect – not to mention new programming languages for us both, and all kinds of hardware hacking skills. A highlight for me was being able to make use of hardware hacks developed by friends of mine. It made me feel very lucky to be part of such a generous community of techies and their clever ideas. Working with James was really good fun – we were quite complimentary and did everything together over the 12 weeks, from attending the Sheffield tech community breakfasts to delivering talks. For me, the changes to my life have been huge. I've moved to Sheffield, completely fallen for the place, and am now in the process of buying a house here!"

LEILA

"When Happenstance came along it is fair to say that I thought it might be a pleasant and interesting detour for my career as a software engineer. But instead of returning to that path, I've finished the project on what feels like a completely different path, going who knows where! Helping an arts organisation learn new things, to be inspiring and to fix stuff is what I thought would happen. We did some of that, but also I learnt what a Technologist could be – that we could make things, real things with lives of their own which will live on after the project has finished. I've met new people, made friends and found out about interesting things. An interest in electronics has been rekindled, thanks to arduinos and I've started to pick up some Ruby and a bit of Rails. Speaking at Future Everything, TedX Sheffield and at the Open Houses has given me some confidence in public speaking."

JAMES

SPIKE ISLAND



1/ Kevin's drawings
2/ The postcard project helped bring the building together
3/ Kevin and Linda made extensive use of arduinos
4/ The postcard 'exhibition'
5/ Anna Searle Jones

THE TECHIES

Happenstance enabled me to explore an area at the intersection of artistic practice, technology research and education. While embedding digital tools and practices in an organisation was important, for me the key value was in the physical space and proximity of human, not digital, networks.

I approached the residency as an art project, and as an opportunity to brush up my coding skills and pick up some new things. For me it was also a research project, having recently taught research skills to designers.

I started mapping the information landscape of the place – where people communicated and collaborated. I coded some simple visualisations, and some were unexpectedly beautiful. We camped out, initially, in the Associate Space at Spike. We met a few Associates, but collaborators came from other quarters.

Just spending time in Bristol made me notice Bristol-centric things. Completely separately from Spike, I saw two calls that I submitted work to, which happily were accepted. I brought my wife and daughter to Bristol for the (incredible) Spike Open during the May Bank Holiday. It was close to my daughter's ninth birthday, and she was talking of robots. In the gallery at Spike she drew a detailed plan for a robot she wanted to build. I ordered some parts and we built a cat-sized robot. Long story short, the sonnet-reciting catbot was a big hit at the Shakespeare Fest.

The simple communications, the chats over tea, were valuable. We talked 'programming' with curators, discovering some fascinating overlaps and, for me, ground for further research. Our work became less about our personal projects and more about teaching others our tools and techniques. Teaching 'computational thinking' to creatives proved less interesting than seeing how artists managed their time and space.

The happy result of all this was that all that data collection and visualisation began to take physical form. One curator made a mini-theremin, another made a motion-sensitive light. It all fitted with their own practice, and in turn, I learned something about programming galleries, not just computers – how to choose, hang, and curate things and experiences.

I landed another academic gig – I was offered the post of Head of Information Experience Design at the Royal College of Art. In the interview someone said, "I hear you did some work at Spike Island."

So all that research, my first real art exhibition, my first experience doing theatre; the coding and making, the collaborations and communications – will now inform a new MA curriculum aimed at the intersection of art and design practice, technology and research.

Happily, my collaborations with Spike continue. Long after the residency ended, we wired up some sensors which immediately started tweeting motion data. I'll send students to Bristol, bring Spike staff to London. And we'll carry on the experiment...

KEVIN WALKER

I studied at an advertising school called Hyper Island, where I was taught that we should always be trying to step outside our comfort zone in order to grow and learn. I've since dedicated Mondays to trying new things and doing things I normally wouldn't do. When I read the Happenstance brief I loved the idea and wanted to do it. However, I didn't meet the criteria they listed they were looking for. Luckily it was a Monday so I applied anyway. (The interview day was a lot of fun, I loved brainstorming with James Bridle about what would later become Offbot) I could see the point of Happenstance was to do with bringing digital thinking to the arts sector, but I should confess I saw it more as an opportunity for me to play with cool hardware.

Having been freelance for some time, and only ever working at quite liberal tech startups, I found the 9-5 concept quite difficult to deal with. I much prefer working later in the day, and even had a few all-nighters at the gallery. Also, they really like email... something I'm allergic to. I found the commuting difficult.

But I loved being at Spike Island, it's a wonderful place to be and I found the artist studios very inspiring. Besides that, I loved being given the opportunity to play with hardware I'd been wanting to try out for ages. I really enjoyed doing a Design Jam at Spike Island about the kind of problems Spike Island is trying to solve. We had so much good feedback from the people taking part, and have had many requests to do more. The absolute best thing though was meeting the people at Spike, the Bristol tech community, and of course the other Happenstance people (I've got some things planned with Natalia that I'm really excited about.)

LINDA SANDVIK

THE ORG

Perhaps counterintuitively for a project that was built around rapid prototyping and short sprints, the most significant impact of the Happenstance residencies for my colleagues and me has been a chance to slow down. This hasn't come easily for a team that is often trying to do too much in too little time, but the presence of Kevin and Linda here disrupted our workflows and gave us the space to look at the way we operate individually, as a staff team and as an organisation.

Truth be told, there was initially an element of culture shock on both sides: What the $*!@ is an Arduino and what does it have to do with me? Why doesn't anyone here use Twitter? Whereas I had (probably foolishly) anticipated us all jumping in feet first with overflowing enthusiasm and creative energy, we found ourselves having to pause quite frequently throughout the process, to discuss and reflect, to catch up with one another. But this was good; this is exactly what the project was about, navigating the borderland between these two often disparate worlds. It was in these moments that we learned the most.

For me, the moment that created the biggest shift was a conversation with Kevin and our director Helen on Kevin's last day here. By that point it had long been clear that our jobs were safe – the residents weren't going to replace us with robots! – but that our lives weren't going to be radically improved by the introduction of some gadget. What was also clear, though, was that in the spaces that the residents opened up there were valuable opportunities to reflect. This didn't necessarily have anything to do with technology itself, but more to do with the differences in mental and physical processes that digital cultures could make us aware of: observation, measurement, orchestration, programming, hacking, code, comments, sources, scripts, languages, affordances, signals, circuits, tools. As the three of us spoke, we became excited by the idea that technology could provide these sorts of pauses, slowing us down rather than adding to our workload. Perhaps an audio guide, based on a meditation app I'd just downloaded that is essentially silence, to help people encounter works of art intimately rather than bifurcating their senses with sound while they are looking?

This isn't at all to say that we didn't get our hands dirty – we've got the scars from the soldering iron and Arduinos Blu-tacked to the walls prove it. But the time we spent with Kevin and Linda gave us a base of knowledge and confidence so we can now draw on the resources of digital culture ourselves. The Happenstance project has been an initiation, a challenge, a step back and an inspiration.

ANNA SEARLE JONES, MARKETING MANAGER AT SPIKE

THE MENTOR

I was delighted to be asked to become a Happenstance mentor and particularly pleased to be working with Spike Island – we are both located in Bristol and share many collaborators and artists, but haven't formally worked together for a while. I really enjoyed Kevin and Linda's exploratory approach to being embedded in an organisation. Their curiosity and sensitivity enabled them to negotiate what was sometimes a challenging journey, and by not obsessing over technology (which could have been quite alienating), they took the staff and residents with them.

CLARE REDDINGTON, DIRECTOR OF iSHED AND THE PERVASIVE MEDIA STUDIO

"What the $*!@ is an Arduino and what does it have to do with me?"

LIGHT HOUSE

1


2;3

THE TECHIES

The switch of placing technologists in arts organisations seemed a testament to the idea of 'creative technologists', and a challenge worth rising to. As someone with a strong background in technology, who is increasingly billed as an 'artist', I wanted to understand first-hand how the art world views technology.

The brief for Happenstance was refreshingly open, and it was clear that we could work on whatever we wanted, with the full support of the programme. Working with Natalia on our Offbott project was of obvious benefit to our skills and to the arts organisations we hoped would use it, but quite early on in the project I came to see that the main point of Happenstance was to see if it was possible to import the perceived 'culture' of technologists—of hacking, making, prototyping and fast, loose methods of working—into another setting. I was initially quite cynical about this: I don't believe there is a single technology culture, or that it's methods are universally applicable. I was proved wrong to some extent: inviting strangers into your office does shake things up, enabling interesting things happen.

The people were the most enjoyable aspect of the project: their kindness and generosity with their time, knowledge and skills. I felt very lucky to be able to pursue my own interests in such a supportive and interested environment.

All the challenges I faced were personal: adapting to a busy, businesslike office from my noisy, messy shared studio, and travelling from London to Brighton on a regular basis, a commute I'm definitely not (and did not get) used to. The commute was a shame, because it meant I didn't get to hang out with the people at Lighthouse as much as I would have liked.

I feel like I have a wider network of people to call on at any time for advice or skill sharing, and I'm a lot more confident in raising my thoughts and arguing my case in groups, as a direct consequence of the support and openness of Lighthouse.

JAMES BRIDLE

As soon as I heard about the project, I knew I wanted to do it. Not often I'd get an opportunity to do a project which technically doesn't have tangible deliverables. I had an awesome job at the time (my job title was Near-Futures Explorer – not making this up) which I was sad to quit, but my boss and I both agreed that it would be a great opportunity to try something a bit different.

I also liked the fact that the project seemed to be about helping organisations to think like digital natives, rather than developing a product. Technologies can change, come and go – apps made today will be obsolete tomorrow. Of the NESTA funded projects this was the only one that invested in people, and by extension in the future of the organisations involved.

If the arts sector needs adapting to the change brought on by technology then it doesn't need an app. It needs the ability to keep up with the pace of change. Happenstance gave me the chance to almost live with people using my prototypes for a while. I could watch them every day and develop a much deeper understanding of how those things fit in, whether they have an impact on people's work, and if so, how.

I was present in the office five days a week (doing my freelance work from there as well) to help everyone else get familiar with me, and comfortable sharing ideas and suggestions with me. Doing my best to develop a bond of trust had another purpose. Happenstance was about affecting people's working lives, right? I couldn't just walk in off the street and start pointing out what's "wrong". I don't remember who said it to me, but it stuck with me: when you're dealing with improving the way organisations work, those involved know their own challenges better than you and have already thought of solutions. Your role as a designer is to facilitate people talking to one another about their ideas. Top-down approach to change doesn't work, it has to come from within.

So I made the tea. I talked to everyone; together and separately. I drank beer and made friends. This wasn't the time and place for professional approach to relationships – I had limited time to make myself useful. I realised that everyone in the organisation was already working towards Happenstance's goals, but perhaps they needed a little more bravado and confidence. I wanted to instil some hacker mentality: not being scared of trying new things, knowing that you don't always need to know everything, not being afraid of breaking things and failing.

Weekly Friday Code Club workshops were an attempt at this. I did an introduction to how the internet works, how to make a simple site, how to do circuit bending, or program an Arduino to make a light controlled theremin. The intention wasn't to teach technologies; teaching those was merely an excuse to talk about problem solving. This approach where you just try things out without fear, and do things you don't know how to do seems alien in the arts sector. It's a very bureaucratic environment, shaped by the funding model. That doesn't mean internally there isn't room for innovation and curiosity.

For me personally a lot has changed since the project ended. As a freelancer, I used to mostly do web development. Because of Happenstance I have been able to talk to more people about my interests and about my practice. Subsequently I started getting more opportunities to do projects that aren't websites. I certainly approve of this.

NATALIA BUCKLEY

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THE ORG

In my view, Happenstance is all about people. So the biggest challenge was finding the right residents, and putting them with the right arts organisation. Finding people who are open, sharing, have a collaborative nature, and are skilled at building trust was the most important challenge of the project. We've been fortunate in that we've found six inspirational residents who have brought energy, knowledge, generosity and open minds to our organisations.

The challenges were in making time to talk and think; not aiming for a final outcome; being open to cultural change overcoming challenges; having our technologists embedded within the team; making our concerns, woes and joys their own, and vice versa.

There have been some clearly observable positive changes within Lighthouse already. Our residents, have got us talking more openly with one another by implementing Agile management techniques, and this has had the immediate effect of increasing efficiency. The software tool they've designed to help us journal and share our thoughts – Offbott – has been something of a minor revolution within the team. It's helped each of us develop a greater awareness of the nature of everyone's jobs, and the uniqueness of each voice within the organisation. We've already been planning how to integrate the tool into wider project collaborations. The Coding Club which Natalia Buckley established, and James Bridle's This is A Working Shop helped demystify digital technology and coding, showing the team that technology doesn't need to be the preserve of specialists – it's something that all of us can get involved with. That's been a real revelation for many of us. We feel inspired, empowered and motivated.

HONOR HARGER, LIGHTHOUSE

Channels of communication within the team have been opened up and made more immediate and informal. Team members feel more connected to each other, and aware of each other's areas of work. The building has been used in new ways, mixing work and social activities in the communal areas, to great success.

MIRIAM RANDALL, LIGHTHOUSE

Developing processes to collect data produced by visitors rather than having to ask visitors to produce data for us is an ongoing development that will have marked effects on efficiency.

JAMIE WYLD, LIGHTHOUSE

THE MENTOR

Happenstance is a very subtle but surprisingly effective way for arts organisations to develop their understanding of digital culture. As the mentor for the Lighthouse Happenstance residencies, I was initially surprised that a digital arts organisation felt they needed help in this area. Talking to James and Natalia at the beginning of the residency, I think they felt similarly unsure about what would actually happen – were they there to make something? To run courses? Or would they end up just being a kind of ad-hoc IT support team?

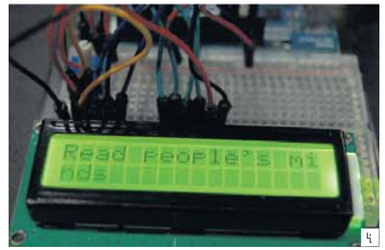
As the residency developed, the value of Happenstance emerged. Even though Lighthouse commission digital works, as an organisation they have established the work patterns of most other arts organisations, working to the rhythms and deadlines of funding bodies, local partners and the events they run. James and Natalia brought a refreshing reminder of how digital technologies have changed the way we work, and connected the Lighthouse staff in a very visceral way to the networks and technologies used by the artists they commission.

Through hands-on workshops of everything from hacking websites to using Arduino, James and Natalia made the process of digital culture tangible to the Lighthouse team, and started an important debate about how they work, and why they end up falling back into traditional arts organisation behaviours. The final workshop/exhibition in the Lighthouse foyer made the normally invisible process of writing code into a physical presence, reminding us that making digital culture is as tangible a process as any traditional art practice.

As a mentor, I wasn't sure what Lighthouse, or the residents would get from a project that seemed very light on structure and goals. By the end, it was clear that the informality of the process was key to the project, stopping everyone from focusing too much on their assumed 'roles', and creating a space for informal conversations to develop into some pretty fundamental questions about how organisations work, and how digital culture is understood as an artistic practise. I learnt as much from the project as everyone else, and it caused me to think hard about the culture and ways of working in my own organisation.

More than anything else, Happenstance made us realise how little organisational structures and habits have changed in response to digital culture, and how much we need to create time and space for more experiments like this.

MATT LOCKE, DIRECTOR OF STORYTHINGS



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1/ The team brought agile methods into the gallery environment
2/ James and Natalia hard at work
3/ Rachel introduces the Open Day discussion
4/ It's all about working out what people are thinking
5/ Matt, Honor, Natalia and James
6/ Early sketches for Offbot


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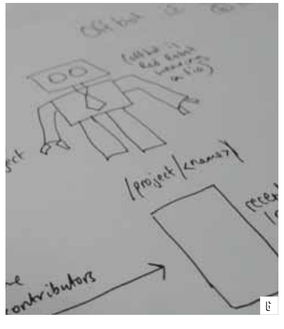
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MAKING THINGS FAST

LEILA JOHNSTON

I describe myself as a maker, which is a bit confusing because I'm unusually poor at the things people associate with making – cutting out, gluing, building, sewing, cooking, design, planning, concentration. But I'm certain I am a maker. I have a pathological impatience with existing things. The possibility of generating something that didn't exist before is the only reason I get up in the morning, and it's the reason I applied for Happenstance.

Almost two years ago now I put my ideas into a talk called Making Things Fast. No one was more surprised than me that my pathological impatience with the world could be formulated into something positive. Since it went down quite well each time I delivered it, seems relevant to Happenstance, and may yet be useful to people trying to create new things, I thought I'd share some the outline of that talk for you, here.

1. Stop caring. Stop caring about the future, and the past. Caring is a leaden responsibility that clings around you neck, tugs you around at whim, and ultimately just sends you back to where you started. Don't invest emotionally in the future of your work, because the future hasn't happened yet and is much more out of your control than you think, in any case. There is no place for 'strategy' in fast making.

Stop caring about it being perfect, too, absorb the truth that it never will be. And stop caring about it being yours. If you love it, you will let it go. As soon as you've tried being generous and liberal with your ideas, the advantages of doing this will be obvious and the drawbacks of neurotic hoarding will show up in relief as a shocking embarrassment. Throwing your ideas out there into the world will attract interest and energy to you – and more ideas will grow in their place. Most people don't have this confidence, so you won't have much competition. Just don't ever be left with just one thing to hold onto. Really, keep checking yourself, because you must guard against that like mad. Make it, ship it, forget it.

Past success is a poisoned chalice. We all know someone bitterly attempting to dine out on their historic achievements, perhaps still identifying themselves primarily as the author of a book published years ago, or still caught up on some idea that others have since done better. If you really want to make, you have to stop caring about the past: it's difficult, actually it's agony, but let it go. Let it go. You're only as good as the next thing you make.

2. Remember that motivation is the mother of invention.

Motivation declines over time. No surprises there. But make things fast, while the stars are aligned and the spirit is high, and you'll be able to make so many more things. In fact, you'll feel you need to. So: defend your motivation at all costs, because when it comes down to it, your motivation is all there is. I can't stress that enough. Stand up for it, watch for doubt like a hawk, and hunt down inspiration every day. Motivation is the source of everything – why would you play fast and loose with it?

3. Drop your dreams. Controversial one, but think about it. We live in a society hell-bent on self-improvement and Britain's Got Talent style "dreams". But dreams are just a mind-altering drug to divert us from grim body-shovelling reality. However you look at it, making things come true involves making. So are you making, today?

Or are you dreaming about next year? Are you doing what feels right or are you living your life as a competition? Because, you know, there's no prize at the end. The only worthwhile ambition is the one that you can make good on today – there's something to be said for acting as though tomorrow might never come. That behaviour doesn't arise out of the fairytale fantasy of 'ambition', it comes from being conscious – sometimes horribly so –that none of this will last forever. Don't watch Cinderella. You could watch Bambi, perhaps.

4. Stop making claims. We're terribly good at telling ourselves stories. Sometimes we're so good that we actually start to believe them, and they start to evolve into the stories we tell the rest of the world, and seep into other people's heads, and eventually become such influential phenomena in society that people forget they are just based on hot air, hopes and lies. And it will keep happening, because all people really want is for other people to like them and give them attention.

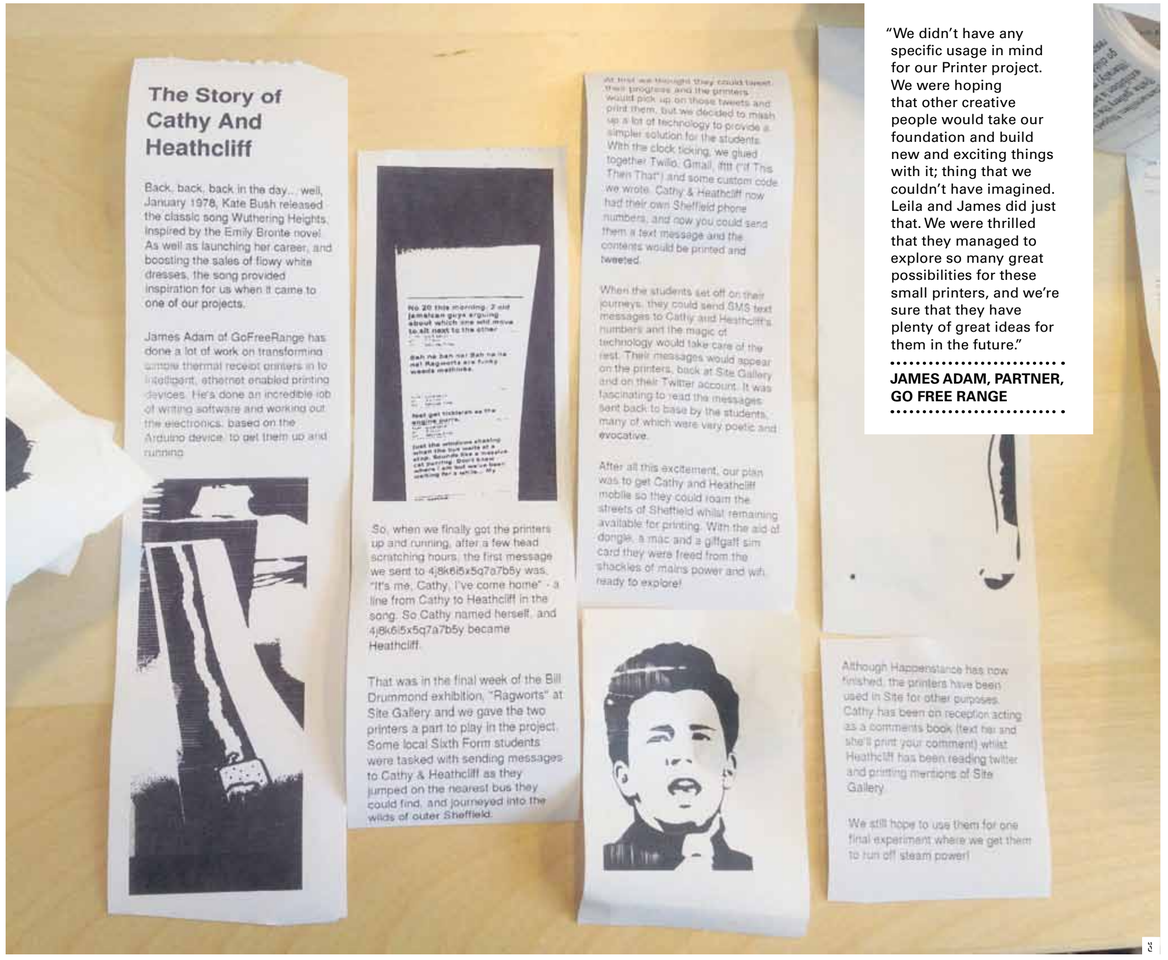
I don't like CVs and I don't like "about me" pages. Making claims about yourself or your projects will filter your choices and influence your work – OK in some ways, of course, but a disaster for fast making. Claiming is dangerous because it might seem inspiring to begin with, but sooner or later it will slow you down and stop you making. Whatever you think you're doing will bear very little relation to what other people think about the work anyway – any explanation you offer is just a reflection of a guess you're making about a stranger. Why make life so difficult for yourself?

1/ Live sketches from James and Leila's TEDx talk, by Sarah Smizz
2/ The story of Cathy & Heathcliff

You only have so much energy – spending it making things, not statements of intent, and let your audience make up their own minds. Forget them, and they won't be able to get enough of you. All supplementary writing creates distance: words, claims, tweets, the little cards with writing on next to sculptures – these things are absolutely bursting to step in where Things should be. Turn off Twitter and do something less boring instead, because things that exist are always better than things that don't. Except unicorns, of course.

Barriers to fast making, then:
1. Worrying about what may happen. Clinging to and cossetting your ideas in a dream future you cannot, in fact, control.
2 Thinking you'll never have a good idea, ever again (irrational: you haven't had any problems so far).
3 Thinking every idea has to be The Idea. A million tiny failures are what gets you there, not One Dream.
4 Describing instead of just doing.

Solutions:
1. Detach from goals and let yourself play pointlessly, guilt-free.
2. Detach from past glories. You're different now – how?
3. Make regularly, make fast, and make partial things. The faster you are, the more you can make!



"We didn't have any specific usage in mind for our Printer project. We were hoping that other creative people would take our foundation and build new and exciting things with it; thing that we couldn't have imagined. Leila and James did just that. We were thrilled that they managed to explore so many great possibilities for these small printers, and we're sure that they have plenty of great ideas for them in the future."

JAMES ADAM, PARTNER, GO FREE RANGE

OBLIQUE INNOVATION

BY CHRIS BILTON

"James, do you know how to work the internet?" For many arts organisations (and many researchers writing about arts organisations, let's be honest) technology is a necessary evil, something to be endured. If it doesn't work, it probably wasn't supposed to, we'll muddle through. If one laptop clogs up, use another. If the email clients don't speak to each other, open another window. Arts organisations tend to be project-focused, not process-oriented. Technology is part of the cluttered terrain standing between us and our goals.

Technologists are more likely to look for a better method – smarter, quicker, more efficient. Some of Happenstance's innovations have been about the organisations adopting new ways of working with technology ¬– new software, new tools – but they have also brought a changing attitude to technology, showing it as something which enables, and doesn't just get in the way. Embedding technology into an arts organisation means reconnecting ends and means, method and product.

The quick fix – sorting out the wireless, rebooting a monitor, fixing the website – doesn't sound like a transformative process. But a lot of the organisational change we are witnessing through Happenstance is oblique; it happens across and sideways from the point of interaction. At the start of this process, there was talk of workshops on agile methodology and drop-in sessions. As time has gone on, though, much of the learning has been implicit rather than explicit. Just watching over the shoulder of the technologists, picking up some of their kit and playing with it, allows arts organisation to adopt or adapt some of their techniques. This subtler change of just having technologists present and working creatively seems to bring in a different attitude to techniques and technologies. The residents may not be able to fix the entire internet for you, but they might encourage arts organisations (and researchers) to think more attentively about the processes which go behind and before the product.

"Happenstance's innovations have brought a changing attitude to technology, showing it as something which enables, and doesn't just get in the way"

COMPUTATIONAL THINKING

KEVIN WALKER

When it comes to embedding digital in arts organisations, 'computational thinking' is the wrong term; it's less about technological things than about practices and processes.

Google's brand of computational thinking involves breaking down a problem, looking for patterns in the data, generalising/abstracting, then developing algorithmic solutions. Straight away you can see that this is a Google-centric approach, geared toward big datasets and a sort of engineering mindset. It assumes you have a well-defined problem, can rigorously collect lots of useful data, and either have the time to go through it, or can adequately instruct a computer to do so. Not even coming to the bit at the end about devising an algorithm.

Instead of trying to think like a computer, consider the opposite approach. Maybe your problem isn't well-defined, or it's a question or exploration or idea rather than a problem. Maybe instead of breaking it down into discrete steps, you build it up, serendipitously, pulling from disparate, sometimes unexpected, sources. Maybe it is derived from a pattern, or comes together in something we immediately recognise as a pattern. Maybe you don't want to create instructions to be able to replicate it again and again; you want each outcome to be unique, contextualised. This is roughly the process of making art. Or curating an art exhibition.

Inspired by psychologist Daniel Kahnemann, we explored the distinction between rational and intuitive thinking in the workshops we ran. We took up Spike Island's challenge to break down walls and make things visible, approaching it using computational thinking. Breaking down the problem, we first wanted to find out about activity in different parts of the building, and we collected data about movement, information-seeking behaviour, collaboration and communication. Some patterns emerged – time-based cycles of activity for example, and spaces where people went to meet and collect information. (Perhaps not) coincidentally, Google Analytics makes it easy to collect such statistics about the Spike website; could we do the same for the physical space? It requires collecting data at key times and spaces (or at all times and spaces, if you have Google-sized resources), then plotting and analysing, before generalising and programming.

Is there a middle ground between rational and intuitive, computational and creative? Maybe. Design patterns are a bit like computational thinking; they're a similarly ordered set of steps to frame and share creative solutions. The problem comes first, framed in its typical context, then a solution follows, with cross-references to other patterns. It may or may not be informed by lots of data.

The common thing in all those approaches is patterns. This is the part that humans are much better at than machines. "We are hardwired to gain control of a situation by recognising patterns, even if they ignore current rationale" says Shing-Tat Chung in a fascinating RCA project last year. It's about moving people into the thought space that an algorithm could operate with a very humane way of working.

In other words, make computers intuitive by breaking them apart, soldering them together, planting them into spaces and things, then programming those spaces and things. Arts organisation can be thought of as computing platform, with open data for various applications.

"Is there a middle ground between rational and intuitive, computational and creative?"

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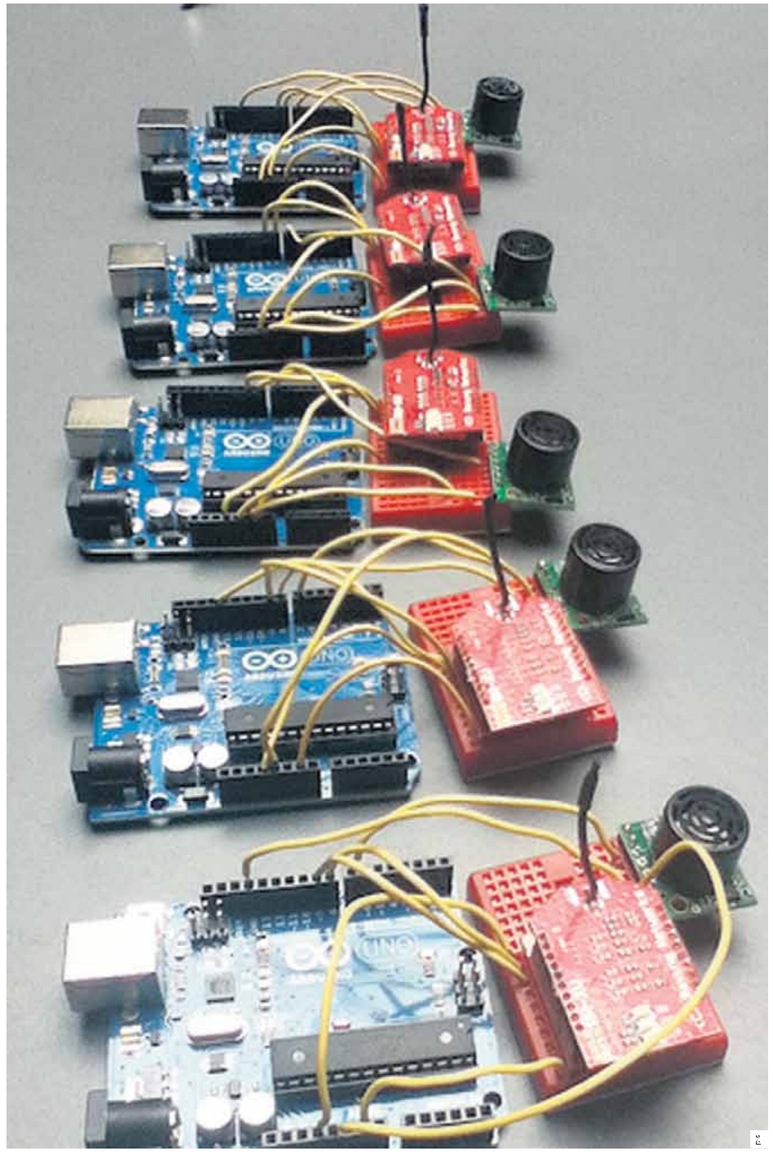


2-3

ABOUT ARDUINO

Kevin and Linda made extensive use of the Arduino, an open source programmable microcontroller. You can buy complete Arduino experimentation kits (including lots of useful components) for as little as £60.

Because of their affordability and versatility, Arduinos have a huge hobbyist following, and are gaining popularity among artists who work with technology too. They really do pop up everywhere.

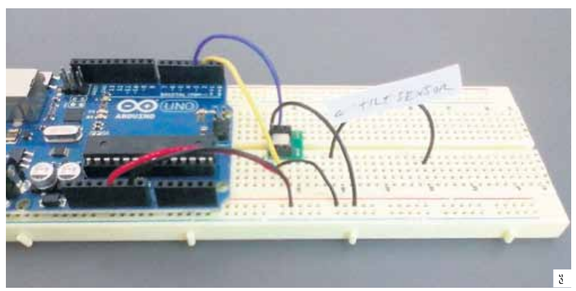
Arduino programs (called 'sketches') can be saved onto the Atmel chip on the board, so they don't always even need to be plugged into a computer.

ABOUT KINECT

The Kinect is usually used for games, but it's an exciting tool in its own right, and an incredibly advanced piece of technology that anyone can buy from Argos for £130. The Kinect is a gesture sensor. Essentially, it's a depth camera and a regular camera next to each other, plus a couple of mics and some robotic joints. You can talk to it using a relatively simple programming language called Processing.

Kevin's work used the depth camera, which projects invisible laser beams into the room and uses a sensor to create a 3D model of everything the light hits.

1/ Kevin's Kinect work – a different way of looking at the world
2-3/ Breadboarding and prototyping with arduino played a big part in all the residencies



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THE CRAFT OF CODING

JAMES BRIDLE

For a while now, I've been growing more conscious of the gap between traditional ideas of work and craft, and modern technologies. It's not a new observation, but with the increasing fetishisation of the one-off, the authentic, the artisanal and the hand-made—not least by technologists—it seems worth worrying at.

If you go into a carpentry workshop, you'll see sawdust on the floor. Work is being done here. You may not understand the work, that's OK, you're not a carpenter and you don't have to be, but you get the sense that something is being done, a skill is being exercised, a craft is being performed. And at the end of the process which is occurring, in part because of the visibility of the craft, you appreciate the value of a chair or table not because you can make one yourself, not because you have any specialised knowledge – but you understand that work, time and skill went into this thing.

This is a problem when we come to contemporary, technological skills. It is a problem for the workers, because their work, their skill, their craft (and we will need to parse these words carefully), are not valued and appreciated in the way traditional work is, leading to both exploitation and argument on the one hand ('why should I pay that?', 'why isn't it finished yet?'), and a technological quasi-priesthood on the other, which does nobody any good. And it's a problem for everyone else too: a barrier to communication and realisation of shared projects, and in the extreme case, a kind of technological determinism, with all the decisions made by the priesthood.

Richard Sennet notes this dilemma in his book The Craftsman, in a discussion about Hannah Arendt's division between Animal laborans (the simple worker) and Homo faber (the critical maker):

"For Arendt, the mind engages once labor is done. Another, more balanced view is that thinking and feeling are contained within the process of making. The sharp edge of this perhaps self-evident observation lies in its address to Pandoras box. Leaving the public to "sort out the problem" after the work is done means confronting people with usually irreversible facts on the ground. Engagement must start earlier, requires a fuller, better understanding of the process by which people go about producing things, a more materialistic engagement than that found among thinkers of Arendt's stripe."

At another point in the book, Sennet writes of the usefulness of focussing on craft in understanding all aspects of human culture and society because of the visibility of its products:

"Because cloth, pots, tools, and machines are solid objects, we can return to them again and again in time; we can linger as we cannot in the flow of a discussion."

This is precisely what we cannot do with notional objects, software, code: we cannot linger before them. But can we imagine a way to do so?

Natalia also pointed me towards these excellent words from Scott Porad, on making software:

"First, name one other thing in the world, he said, that is used by so many people and which is created entirely by hand? Stuff that is made by hand is hard to make, and even more hard to make well, and tends to be less sturdy than things made by machines. [...] Plus, in the history of the world, is there one thing you can think of that has been hand-made, and on such a large scale as software, that was as complex?"

The notion of code as something that is made by hand is crucial.

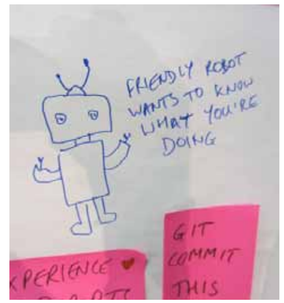
"The craft of the contemporary technologist is not valued in the way that traditional work is."

OFFBOT

NATALIA BUCKLEY

Offbott (your mostly-friendly office bot) is a tool for collecting thoughts and insights that often get lost when working on long term projects. While there's a plethora of tools for organising, planning and managing teams and processes, there aren't many successful ones for capturing these processes as they happen, or for reflecting upon them once they're over. While sometimes these things are recorded through blogging, that's only true of public-facing projects – and some things can only be spoken about between team mates. There are things you might think about and not consider them useful or significant to record, but together they make up a story of the process that provides a rich insight into the project and the team. One of the aims of Offbott is to help communicate better how the organisation works to external stakeholders, but seeing these thoughts collected over time could also be a catalyst for improvement.

Once a day, the Offbott will email you to ask you how you're doing. You don't know when the email will come in. By prompting you out of the blue it tries to catch you slightly off guard, so you record the first thing that comes into your head. There is no set reply format. You're free to tell it about your whole day, the last five minutes, or your plans for later. You may choose not to reply at all.



It will then gather updates from all team members on the project into a timeline of thoughts, a kind of Twitter for offices. At the end of the project you will be able to see patterns emerging: which things kept being mentioned, where the difficulties have caused frustration, which parts were easiest and most fruitful.

Offbott is not intended to gather data on individual's performance. In fact, it tries to stay away from office politics – there is no hierarchy built in. It demands trust from everyone involved: every team member can edit the project or add new team mates.

THE RESEARCH PARTNER

CHRIS BILTON

The University of Warwick research team attached to Happenstance consisted of myself, Ruth Leary (also from Warwick) and Katherine Jewkes (a former Warwick student, now a freelance producer). Research was always at the heart of Happenstance, because everyone knows you can't have R&D without research, and because, as Einstein said, "If we knew what we were doing it wouldn't be called research'. So this was never just going to be a project evaluation exercise, but an attempt to initiate and embed change, for organisations and for individuals.

Each researcher was attached to a different arts organisation for the duration of the project. We visited once a week, we posted our observations on Evernote, we phoned, texted and emailed, we met and talked. We encouraged the participants to reflect on their own process and to value and trust their own skills and impulses.

Happenstance was premised on a belief that connecting talented people and giving them space and time to create would produce extraordinary results. It did. But our job was also to watch the less spectacular incremental changes in individual and organisational behaviour, to identify and document how one-off innovation and personal transformation bed down into organisational change.

We learned that technology people are good at making things first and asking questions later, and that arts organisations can provide a purposeful frame within which random innovations can acquire direction and value. We also learned that generalisations like the previous sentence always need to be challenged, and that processes of innovation and creativity in technology and the arts might not be so different, after all.

I'm writing up the formal report for NESTA which will highlight the lessons learned and some potential next steps for whatever might follow Happenstance's lead. Ruth and I have already presented a conference paper about Happenstance in Barcelona and I'm about to talk about it again in Belgium.

What these formal reports won't capture is the ways in which we as researchers have been changed by Happenstance. I feel more confident about the relevance of some of my theoretical ideas about organisation and creativity to practice and vice versa, and I'm thinking about ways of connecting this into my teaching. I'm more conscious about the way I communicate with others, how ideas get blocked, mediated, shared, embraced. I've even bought an Arduino kit for my son's birthday. The learning continues…

THE TECHNOLOGY PARTNER

Caper is a creative agency. We run innovation programmes and create digital campaigns, strategies and prototypes for a range of clients, including cultural organisations, media companies and luxury brands.

The majority of our work sees us delivering digital content and campaigns that use new technology in unusual ways – increasing our clients' digital understanding, while intriguing and delighting audiences. However, our experience of working in-house at arts organisations, including the V&A, Tate and the Royal Opera House, also gives us the experience to run and deliver strategic projects like this one.

For Happenstance, we were the 'technology partner' although this time we weren't the makers; we were the facilitators and enablers. Having conceived the original idea, we discussed the format with many of our colleagues in the digital world, and then worked with Lighthouse and Site to further develop it through the funding process.

Happenstance is about people and our biggest challenge was to create a project that benefitted all the participants, responding to a wide range of challenges in a way that could be usefully reproduced, measured and understood for the future.

We devised and managed the recruitment process – perhaps the most critical element of the project. Putting the right residents in the right combinations at the right organisations was a bit like doing 1000-piece jigsaw of the sky at night: very satisfying to complete, but infinitely complex and challenging along the way.

Once the project began, our key contribution was to act as a bridge between the worlds of art and technology. As makers, we were able to bring the technologist mindset to the arts organisations; as former arts managers, we were able to understand the potential pitfalls and problems that a project like this might entail for Site, Lighthouse and Spike Island.

We have seen continued transformative change in both the organisations and the residents who have taken part, as well as practical, day-to-day benefits for the arts organisations. Happenstance clearly marks the beginning of a different relationship with technology for each organisation and, having developed and produced the pilot phase, we're keen to implement a wider revised model, putting our learning from this first phase into action.

About Caper
Our recent clients include Royal Shakespeare Company, BBC, British Council, Rolex, University of Leeds and the Crafts Council. As well as Happenstance, our own projects include the international open data and prototype development programme Culture Hack and the grassroots network Coding for Kids. Get in touch at *hello@wearecaper.com* | *www.wearecaper.com*

Caper would like to thank the following people for their contribution to Happenstance:

Bill Thompson, Matt Jones, Chris Thorpe and Rohan Gunatillake for offering their advice as we shaped the project.

The project mentors Clare Reddington, Matt Locke and James Boardwell.

All of the residents and host organisations for participating so fully.

Anne Hollowday, filmmaker, for the Working Shop film and sharing her rushes with us.

Everyone who has supported the project by attending Open House events.

And, of course, our funders: NESTA, Arts Council England and AHRC.

Nesta

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