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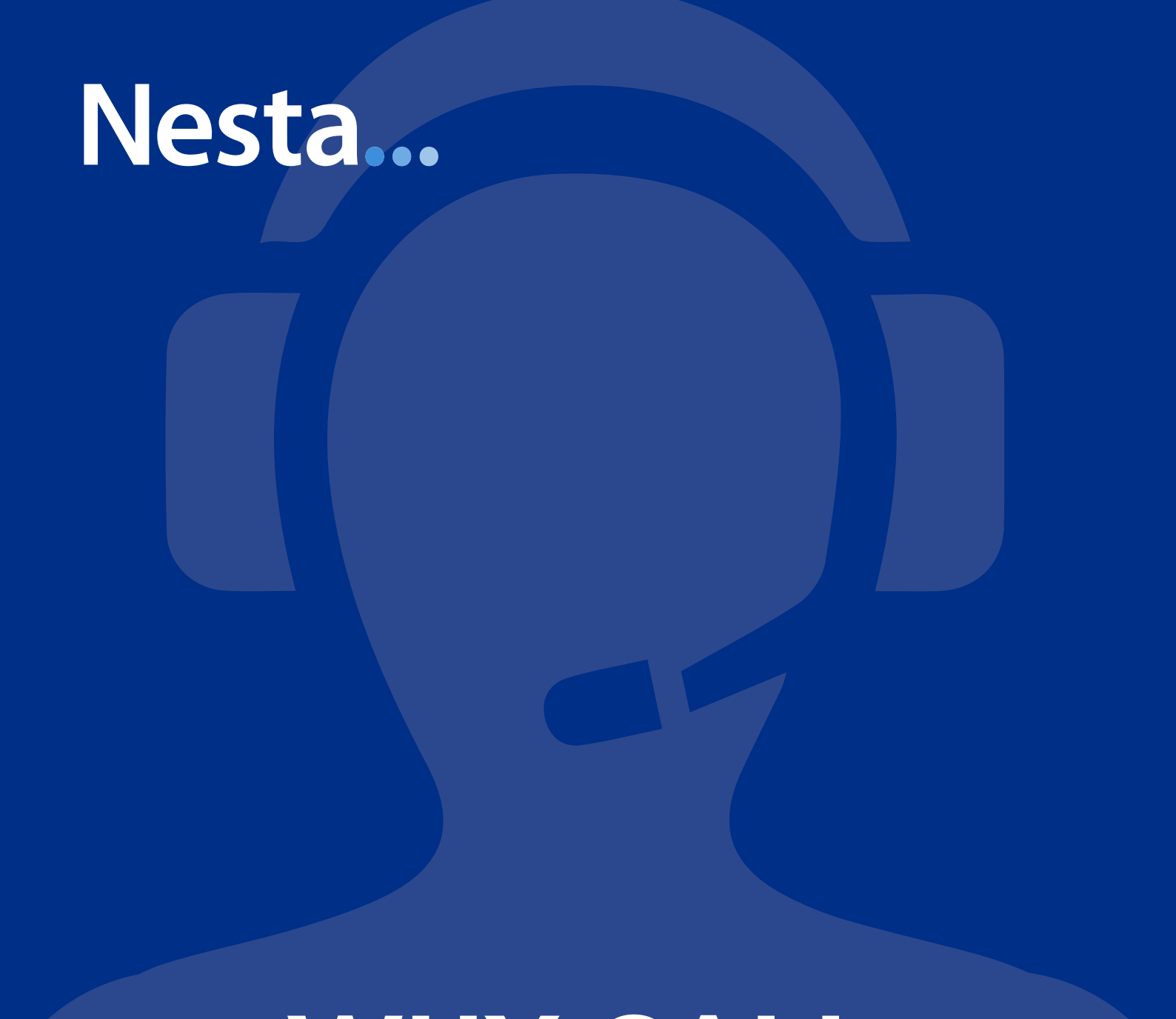

WHY CALL CENTRES SUCK,

and what we can do about it

January 2016

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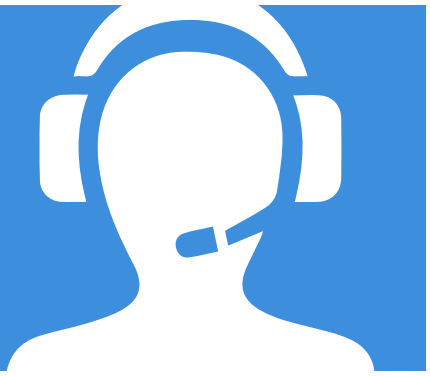


Introduction: **The Problem**

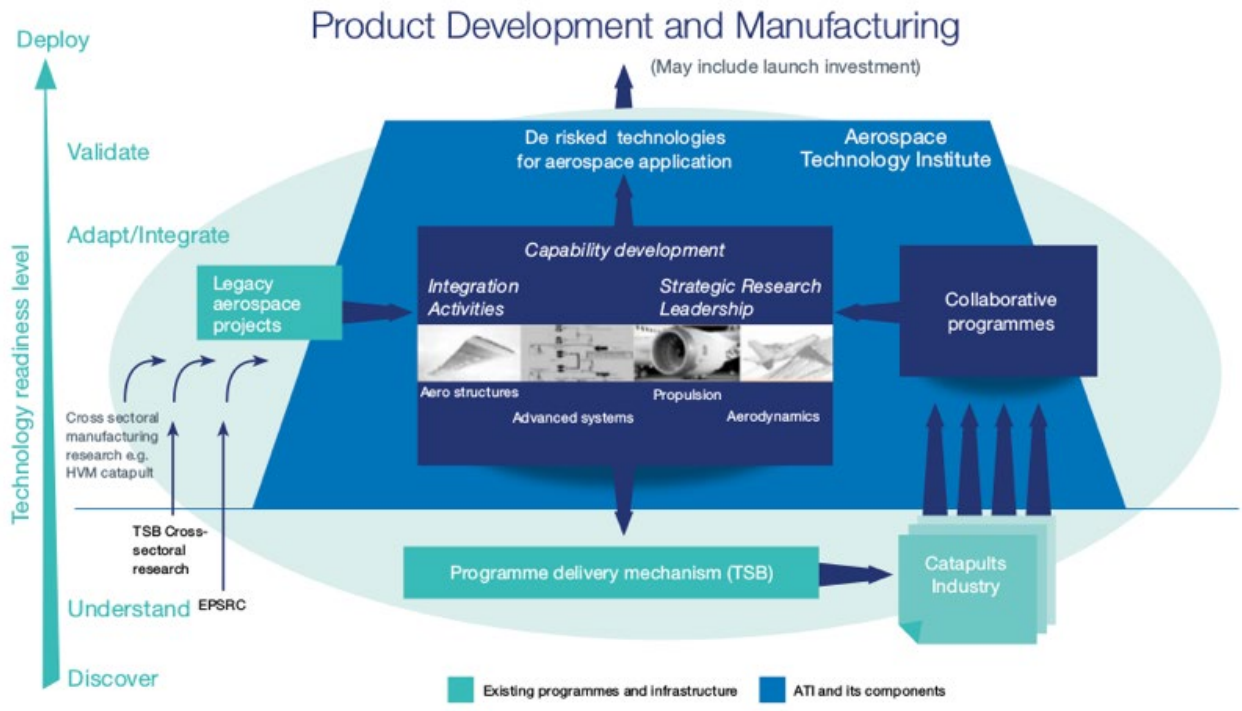
Since 2007, and the beginning of the world economic crisis, there has been an increasing realisation that the UK economy has long-term problems that go beyond Labour investment or Tory cuts, that are usually structural in nature, and whose solution requires action by businesses, by government, by unions, and by other institutions such as universities, co-ops, NGOs and the like. The slogan is 'resetting the national business model.'

In practice, this has been translated as a revival of industrial policy, centred around the Department for Business, Innovation, and Skills under its last two Secretaries of State, Peter Mandelson and Vince Cable. Despite the swing to austerity since the 2010 general election, BIS policy has been remarkably consistent and can claim some successes.

Policy Success: **Aerospace**

Starting in 2011, the Aerospace Growth Partnership, which includes businesses, government agencies, universities, unions, and the Royal Aeronautical Society, has been responsible for defining a strategy for the UK aerospace industry, creating a joint technology-transfer institute and a new aerodynamics research centre, funding higher education for aerospace engineers, securing special financial advisors from a major bank, and identifying key enabling technologies for research, such as advanced additive manufacturing tools. A critical issue is to align the public sector R&D funding cycle with that in industry.

Figure 1: **Institutions for innovation – the ATI**



The ATI: drawing from the other elements of the UK R&D ecosystem to develop early stage technologies through to the level of maturity needed to support future applications in aerospace.

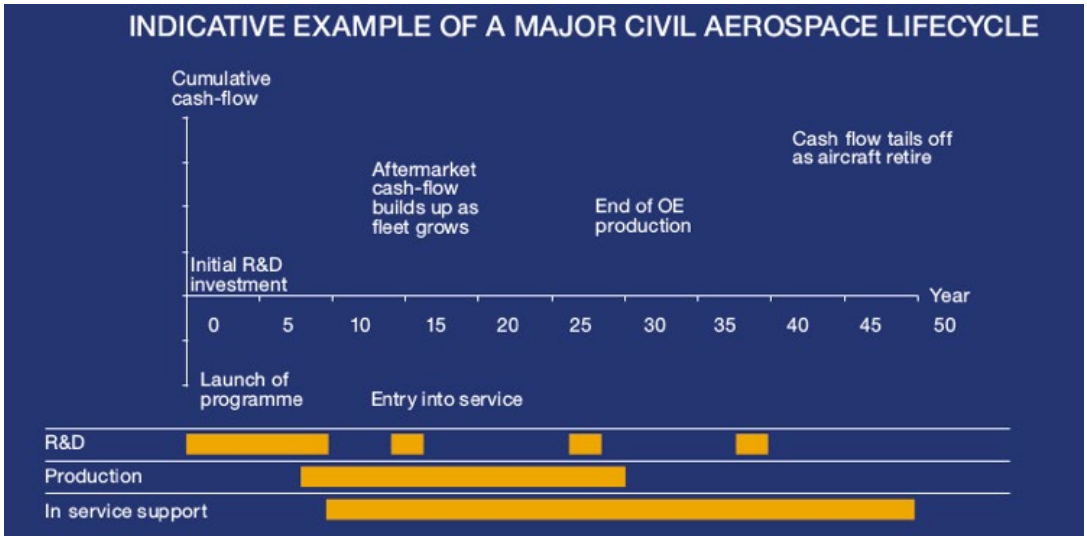
The grand strategic goal is to prepare the industry, over the next seven years, for the retirement of the world fleet of Boeing 737 and Airbus A320 short-medium haul airliners and their replacement by new designs. The replacement of the narrow-body airliners will be by far the biggest order in aviation history, so this represents both a crucial opportunity to win as much workshare as possible, and an opportunity to influence and define designs that are still in the concept phase.

Figure 2: **An industry-wide strategy is needed**

In the 1980s, the UK aerospace sector had the opportunity to secure the primary production facility for the A320 family of airliners, which ended up at Hamburg/Finkenwerder instead. Although it did eventually secure the wings and various systems, it remains the case that there is much less UK content in narrow-body airliners like the 737s and A320s, than in medium-sized widebodies, jumbos, regional jets, helicopters, military aircraft, or business jets.

Although Rolls-Royce is the second biggest manufacturer of aero-engines, there is no R-R engine option for the 737NG or the A320 family. In fact, it is the only segment of aerospace where R-R doesn't have a competitive product, which is a pity as it is the biggest segment. The opportunity missed in the 1980s stayed missed for the whole life of the A320 design, and was missed for engines and control systems as well as for airframes. The following chart, from the UK Government Industrial Strategy for Aerospace, makes the point rather well.

Figure 3: **The challenge in aerospace: 40–year product cycles**



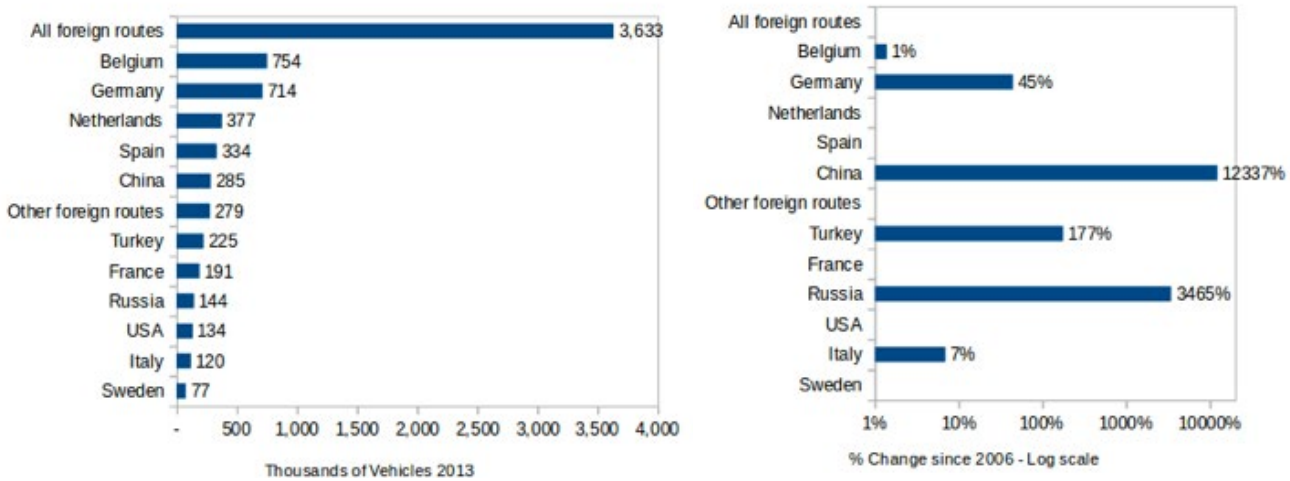
Early results are good – the industry's turnover last year was up 9.4 per cent.[1] This is especially encouraging, as deliveries into the Airbus and Boeing supply–chain were up 5 per cent by volume, implying that there is both more diversification and a higher–value mix of components. Revenue from exports to China was up 23 per cent and to the Middle East 75 per cent, although the United Arab Emirates eventually decided against buying Eurofighters.

Policy Success: **Automotive**

In a pretty grim economy, the UK auto industry has been a very bright spot, growing its exports of vehicles dramatically, and moving up market compared to the French and Italian manufacturers. In the last ten years, exports of vehicles have doubled by value,[2] largely because the average selling price of a British–built car has gone from £10,200 to £20,640.

The direction of trade has also changed. In 2006, 2,000 cars left UK ports[3] on ships bound for China; in 2013 285,000 did, while in the same period of time, exports of cars to Germany went from 494,000 to 714,000, and those to Russia from 4,000 to 144,000. By comparison, shipments to France went from 441,000 in 2006 to 191,000 in 2013 (although more of them may be going by rail). Chart 2 shows the volumes and the percentage change since 2006 – we needed a log scale to cope with China.

Figure 4: **UK vehicle exports, count, by destination**



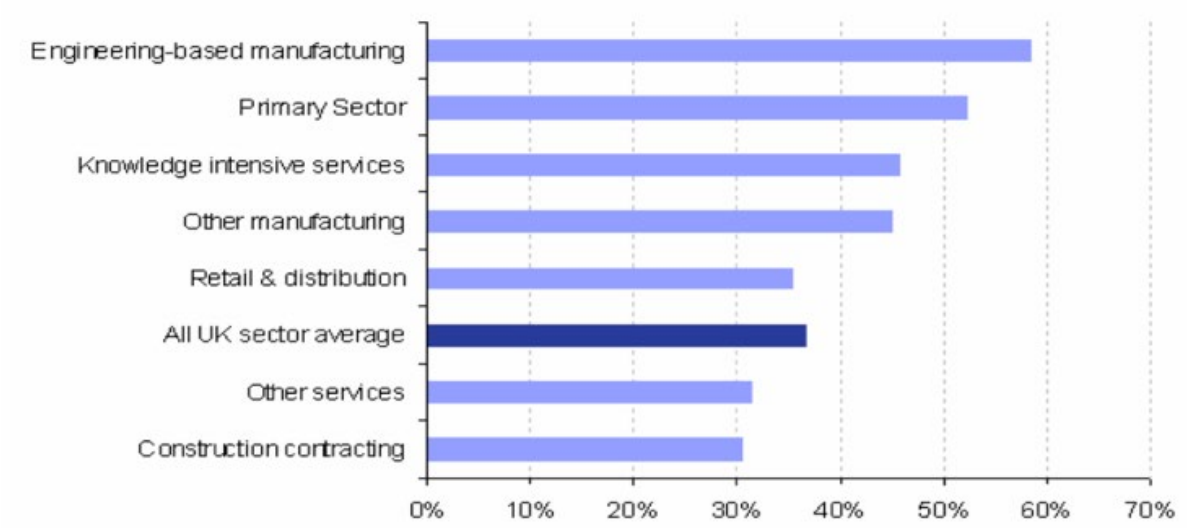
This has also benefited from policy inputs – at the worst of the economic crisis, BIS committed to part–funding the start of GM European hybrid production at Vauxhall Motors, Ellesmere Port, and one of the biggest policy inputs has been the unspoken commitment to a relatively low sterling/euro exchange rate.

Policy Success and its Discontents

The two cases of quite dramatic success we have just seen, however, also tell us a lot about the problems of industrial policy and the structural problems of the UK economy more broadly.

These examples are ones from the technology frontier, which, by its nature, is a small and crowded place. The following chart, from BIS's 2013 Industrial Strategy conference, shows the percentage of firms that innovate at all by broad sector.

Figure 5: **The technology frontier, and the rest**



They are also examples from high–productivity manufacturing industries, which by definition employ a great deal of capital and relatively small numbers of workers. In terms of jobs, even the claimed 115,000 aerospace workers doesn't seem that many in the context of a 44 million strong workforce.

Clusters and regions may not go together

In general, although backing the successes is a good strategy from the point of view of GDP growth and especially of the balance of trade, it tends to accentuate rather than relieve the UK's regional inequalities. In many ways, the UK's regional problems are expressed in the form of its housing problems. If you think lots of workers can move into aerospace, this requires us to think both about how many more houses Barnoldswick or Filton will need, how the workers will afford them, and how the communities that people leave to move there will stand it.

Not only are these sectors already very strong, they are also mostly based in strong economic clusters. Automotive is mostly in the West Midlands and the M4 corridor – Nissan's plant in Sunderland is still a huge outlier – while aerospace is heavily skewed towards the M4 and M3

corridors and a few other places like West Lancashire, although the Bombardier regional jet plant in Belfast is an important outlier.

Developing these industries further is worthwhile, but it is worth reflecting on the problems it doesn't solve. It doesn't do much for the post-industrial big city, because that's not where the industry is located. (The West Lancashire aerospace cluster is close, but trans-Pennine transport is a problem until the promised rail tunnels get built.) It does plenty for places like Bristol or Farnborough, which don't obviously need it. It does nothing for the depressed east coast, for rural Britain, or for inner-city London.

A cluster looks a lot like an old boys' network from the outside

Similarly, the success of industrial policy at the technology frontier will tend to be captured by the highly skilled insiders. It is to the AGP's credit that they have identified the heavily male workforce as a problem and have some ideas about what to do about it. This doesn't, though, deal with the problem of the two-tier labour market, where some locations, sectors, and occupations achieve high productivity and relative equality, while others are on zero-hours contracts. In many ways, this distinction parallels that between the sectors, like automotive, that have emerged from the great financial crisis stronger, and those that have emerged from it weaker.

Although developing aerospace, autos, pharma, and the like is worth doing, whether or not it is enough depends heavily on your assumptions about how easily workers can move into those sectors, how easily they can move into the geographical clusters, and importantly, how much increased regional inequality the UK as a society can tolerate.

Forty-five per cent of Scots voted Yes to independence, and one might be surprised how many Londoners would vote Yes to independence as well. UKIP is, in a sense, a campaign for independence from the UK as it currently exists, as much as it is a campaign for UK independence from the EU. We may be at or near the limit of public tolerance for regional inequality.

Another issue is that although these industries pay well, this may not contribute much to the household economy if disguised inflation in things like administered prices, housing costs, foodstuffs, and fuel continues to be a problem. I say 'disguised' as these are usually excluded from the CPI, the inflation metric used for macroeconomic policy, for student loans, for in-work benefits, and for many wage-bargaining processes.

The vital importance of the mundane economy

Manchester University's Centre for Research on Socio-Cultural Change (CRESC) was one of the first institutions to articulate this problem in its report on the pork industry, *Bringing Home the Bacon*,[4] in which they introduced the concept of innovation in 'mundane activities' as something the policy community should worry about. CRESC argued that BIS especially was too keen on the technology frontier in general, and that they needed to adopt a 'chain definition' of success, including all participants in a given value chain. Here's their definition of the mundane economy:

> *In our view, UK high-tech success is unlikely when, as Rosenzweig insists, business success is relative and Britain will be competing against well-resourced German and Japanese competitors with large lead firms able to finance technik and draw on supply chain capabilities. In our view, it would be more sensible to put the main industrial policy emphasis on defending and growing 'mundane activities', like UK food processing, which, in terms of employment, is currently our largest manufacturing sector, and which could play a leading role in import substitution. In this usage, the term mundane is not in any way disparaging because our aim is to describe and single out some worthwhile activities.*

> *In common sense usage, the term 'mundane' is slippery and deceptive when applied to productive activity. Much production of low–tech products is not mundane insofar as it embodies advanced process technology while many luxury and high–tech products appear mundane when production is traced back far enough to the basic components. We aim to sidestep these difficulties by using the term mundane activities to denote those economic structures and activities necessary to social existence and reproduction for everyone in society, regardless of income and social position. The FTSE 100 CEO and the unemployed school leaver both require access to certain types of goods on a daily basis.*[5]

Certainly, the aerospace strategy is all about creating the kind of 'chain value' CRESC were thinking of, and resisting the temptation of a 'trader mentality' focused on getting month–to–month advantages or extracting rents. The brief review of the AGP above gives the strong impression that the aerospace industry and the BIS have actually done rather well on this score, up at the tech frontier, and perhaps the pessimism about German and Japanese competitors was more of a cultural cringe than a considered argument.

Where we certainly agree with CRESC is that this needs to permeate further into the mundane economy, because only there can it contribute to reducing the UK's regional and social inequalities and to addressing the household economy. Part of the problem, though, is that it is relatively easy to think on a long–term basis if you are already accustomed to investments that have a 40–year project lifespan. How these ideas can translate to other industries is an important question.

Many of the mundane industries are labour intensive, have very short or no meaningful project cycles, are considered cost–centres by other actors in the value chain, and lack the kind of institutions aerospace or automotive have. Powerful cultural and social barriers to innovation exist. When innovations happen, they tend to happen in a manner that follows the existing culture; this is true of all technology, of course, but the problem is to change it, as someone once said.

Chart 2 shows 'knowledge–intensive services' as being almost as innovative as the resources sector (i.e. for the UK, oil, gas, and offshore wind) and as innovative as general manufacturing. This immediately begs the question: what if there was more knowledge intensity in services than we think?

A Mundane Problem: **The Call Centre**

There are some 734,000 seats – work stations – in British call centres. Because a lot of call centre staff are part time (about a third) and others work shifts, there are more jobs than there are seats, by a factor of about 1.6. This gives 1.17 million jobs, 3.98 per cent of the workforce.[6] Depending on how you classify managers who sometimes take calls and how you define a call centre, there might be substantially more, but on the same definition, the count peaked in 2008.

At the apex of the boom, 52 per cent of call centre agents worked in 8 per cent of centres, these being the ones with 250 or more staff. These installations are the mother-houses of the sector. They are to be found in Scotland, the North, and the West Midlands, and they typically serve the financial sector, the privatised utilities, or call centre outsourcers who serve other businesses.

Retailing has the most centres, but far from as many employees as finance, which is to say that its centres are smaller. Finance has no fewer than 212,000 call centre employees, about 20 per cent of the total. Privatised utilities (including telecoms) make up about 17 per cent, retail 14 per cent, and third-party service provision 10 per cent, as do the public services.

These facts point up the industry's deep history. The giant centres emerged in the UK in parallel with deindustrialisation, often literally being built on the brownfield sites left by industry. Capita's Dearne Valley/Rotherham site, for example, is located literally on the site of western Europe's biggest coking plants, close to the seat of the 18th century noble entrepreneur who started mining there in the first place.[7] Over 6 per cent of the workforce works in them in Scotland, the North-East, and the North-West, and between 5 per cent and 6 per cent in Yorkshire. The figure for London is less than 2 per cent.

The customers for them were either driven by the huge expansion of the financial sector, or they were the ex-utilities, or else they were retreating from the high street in order to get rid of expensive branch networks. Rather than paying your bill at the electricity board showroom, you would now pay it by direct debit to a Big Six provider, and you would ring up and argue when they got the bill wrong. You might call another provider and switch. You might be called by a telemarketer and badgered to do so.

Capita mentions William Hill, O2, British Gas, and the RSPCA among its customers in Rotherham, but its jobs website also shows the same site is serving the Department for Work and Pensions' troubled Universal Credit, Npower, Southern Water, and Thames Water. If you've ever wondered why your gas bill seems to be a gamble, think on.

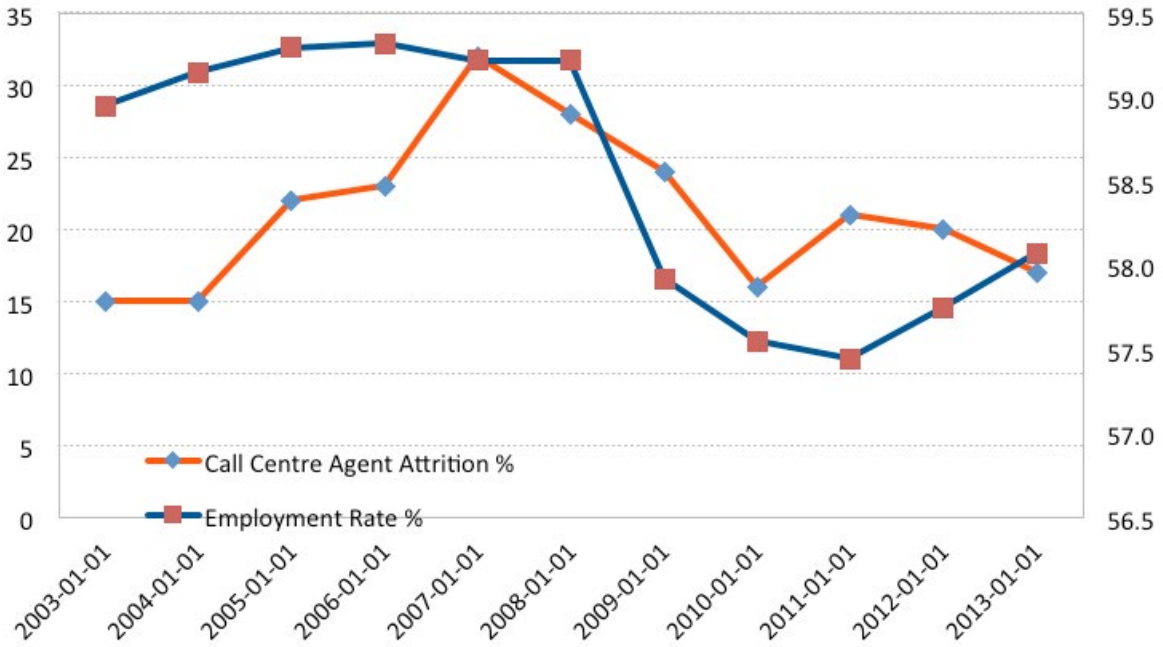
Similarly, the liberalisation of the telecoms industry created both supply and demand. On one hand, the price of telephone service fell, and the price of wholesale capacity even more, at the same time as digital PBX and Centrex technology made it more feature-rich. On the other, competing operators needed to make cold calls and receive service calls, and their portfolio of local offices was re-imagined as a high street retail opportunity, dedicated to sales, rather than a customer service function.

When it came time to make a financial case for investment in the privatised utilities, reducing the costs of service was always important because it was one element of the business that management could control, unlike the transit charges for the use of the infrastructure, set by the regulator, the interest rate on their debts, set by the bond market, or the world prices of coal and natural gas. These were either given, or else it would take years to change them.

In the financial sector, the desire to retreat from the high street and therefore improve the cost–income ratio, a much watched indicator in banking, met the huge growth in credit cards and in banking automation more generally. Providing 24–hour card service implies a 24–hour watch on the phone lines to fix problems. Further, call centres made it possible to offer service without having any branches at all, bringing new entrants like Direct Line or First Direct onto the scene.

As such, the sector's size in terms of employees, the everyday importance of its products, and its association with wider socio–economic change make it very much a valid case of the mundane economy. It is also worth noting that the least likely sectors to innovate, in Figure 5, are 'Retail & distribution' and 'other services', precisely the ones that use the biggest call centres. Mundane sectors are both unlikely to innovate, and assumed to be so.

Figure 6: **Turnover is strongly linked with the economic cycle**



Turnover

One of the classic problems of the call centre is the very high employee turnover typical of the sector. This is perceived from the employees' side as being a response to a stressful work environment offering a minimum of autonomy and little investment in transferable skills, from the management side as a cost. It is widely seen as an index of the sector's problems. Figure 6, from reference 6, provides some insight.

We can make two observations from this. First of all, turnover is high. It was 21 per cent in 2011. That year, the national average voluntary resignation rate was 7.9 per cent, while total turnover was 13 per cent.[8] Secondly, it is cyclical.

Although the industry prides itself on the reduction from the peak of 32 per cent in 2007, it is surely very suggestive that turnover doubled during the 2003–2007 economic expansion, during which the UK economy was operating close to full employment, and then halved during the acute phase of the great financial crisis, 2007–2009. It even rebounded during the short 2010–2011 recovery and declined again during the so–called double dip. The stronger

the economy was, the more call-centre employees quit. This is consistent with a Kaleckian model of the economy in which low unemployment reduces the cost of quitting and therefore strengthens employees' bargaining power, and higher unemployment has the opposite effect. It is telling that macro-economic pressures on the industry were apparently outweighed by this effect during the GFC.

A classic inquiry into the call centre workplace was carried out by the Health and Safety Executive during 2003,[9] which provides some baseline insights into the reasons why call centre staff want out quite so much.

People whose jobs involved taking calls from the public showed much higher levels of work-related depression than any other social group, something they did not share with other employees in the same workplace. On the other hand, they didn't show greater anxiety – typically, this is related to pressure of time, while depression is related to autonomy and to 'role conflict'.

The HSE also applied a standard screen for psychiatric risk factors to its respondents, the GHQ survey. This uses a Likert scale, under which respondents are asked to answer Yes or No to a list of questions, and a case is recorded when a given number of questions are answered in the affirmative. Thirty-nine per cent of call centre workers answered Yes to three of the factors, the cut-off for the GHQ survey. For comparison, an average for even unskilled manufacturing workers was 24 per cent, suggesting that the Dearne Valley, where there are 60,000 call-centre jobs, has experienced a dramatic increase in workplace despair since the transition from industry to services.

Interestingly, all occupational groups inside the call centres they studied experienced high levels of stress on the GHQ measure – management, team leaders, technical and administrative support, as well as call handlers. This manifested itself differently – call handlers were more depressed while everyone else was more anxious – but the HSE researchers concluded that being in a call centre seemed to be harmful in itself.

Various explanations were explored. Following a predefined script, a classic feature of the job, made all the measures worse at over 99.9 per cent confidence. Surveillance by managers displayed a curious U-shaped curve, where the worst outcomes were at the highest and lowest levels. Actual listening-in on calls, though, showed a strong linear relationship with the GHQ assessment – more of it was always worse.

The HSE noted that call handlers felt they had virtually no control over the pace of work, nor over the methods used. They reported having much less control over the pace of work than unskilled production-line operatives did, and somewhat less control over the method. This is interesting; a production line is the paradigm example of a workplace where the pace of work is entirely controlled by management.

This is perhaps explained by the fact that telemarketers, who make outbound sales calls, reported much lower levels of stress even though they are expected to hit targets for calls per hour. The telecoms industry has recognised since the 1920s that calls arrive at a telephone exchange or indeed at a call centre in a pseudo-random manner described by the Poisson distribution. This allows for a well-defined average, but also for dramatic spikes in demand, which occur at random. As a result, it is necessary to design a telecoms system for the peaks, not the average. In fixed telephony the peak/mean ratio is assumed to be about 4:1 as a rule of thumb.

Line workers face work that arrives at a steady rate, and outbound telemarketers make calls at a roughly steady rate. Call handlers on inbounds, over 90 per cent of the total, face call rates that surge or slacken unpredictably, up to four times the average or beyond. This is out of their control, and indeed anybody's control. It arises from the fact that call centres aggregate the result of a lot of random processes, and that telephony is a medium that requires live performance. It is also worth noting that the slack periods may be quite trying too, especially given the high degree of management surveillance typical of the business.

In the government benchmarking exercise we will discuss later, centres were also asked to state their forecast and actual levels of demand. Very interestingly, forecast accuracy (i.e. forecast calls as a percentage of actual) was much more strongly correlated with staff turnover than even pay, suggesting that the variance in demand is a key feature of the call centre experience. This was actually one of the statistically strongest results.

That said, there are other reasons for the uniquely dreadful workplace experience of the call centre. In the US, the telecoms industry introduced the concept of a 'call centre' specifically because setting up a phone company 'business office', essentially the same thing, triggered certain requirements under their contract with the Communication Workers of America. Call centres, by definition, weren't unionised. They very rarely are in the UK.

Failure demand

Employees find call centres especially trying, then. Management seems to see them as a cost to be minimised, or better, outsourced. Like a fire, which needs fuel, oxygen, and heat to keep burning, there are three elements to this story. The third is the user. Nobody likes dialling into a call centre, and indeed some banks advertise that they offer a phone number for each local branch. How does the persistent dissatisfaction of the user play into the wider problem?

A very rough measurement of this is the concept of failure demand: the proportion of the total inbound calls that are motivated by a previous call that didn't resolve the customer's problem. John Seddon, who introduced this concept, claims that it is typically about half[10] the total demand, sometimes as much as 70 per cent in the public services. As a practitioner of the Toyota Production System, Seddon sees failure demand as a form of rework and therefore as the major threat to productivity. This is central to the so-called 'systems thinkers' critique of the call centre industry.

Within the industry, the issue is dramatised by the conflict between two operational metrics, AHT (Average Handle Time) and FCR (First Call Resolution). AHT measures how long a typical call lasts, and therefore how many calls an agent answers per hour. FCR measures how many customer requests are resolved without a second call. The conflict is obvious – the first metric requires workers to churn through calls as quickly as possible, the second that they stay on the line until a satisfactory outcome is achieved. Importantly, a call that fails to achieve anything the first time around may not be resolved the second time around either, so failure demand has a multiplier effect on the volume of calls.

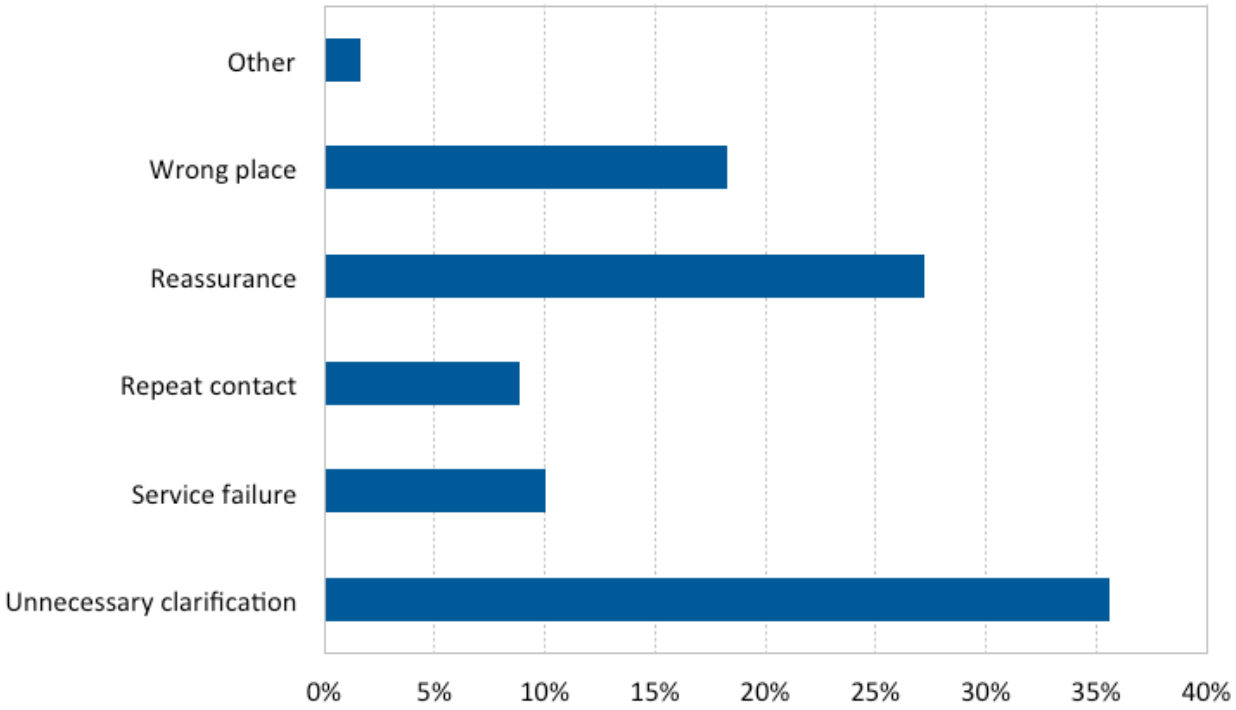
The distinction is more subtle, though. Effective FCR might also shorten calls, if the total process design makes it possible to solve problems on the first call, quickly. If the classic, scripts-and-targets approach worked, there would be no trade-off between AHT and FCR. The important point is perhaps that FCR implies staying on the line until a satisfactory outcome is reached for the customer. Advocates of FCR usually equate it with lean production and, by extension, AHT with traditional mass production.

Validating the failure demand concept

In 2008–2010, a major government exercise was held to benchmark the performance of public sector call centres. This generated a mass of data[11] via quarterly reporting from around 270 participating centres. For the major standalone sites, we found that the percentage of 'avoidable calls', a metric they preferred to FCR, averaged 17.4 per cent, although some sites were as high as 65 per cent.

Although this is not identical to the failure demand concept, the categories avoidable calls were broken down into show that it was much the same thing. The categories associated with failure demand ('unnecessary clarification', 'service failure', 'repeat contact', 'reassurance', 'confusing forms', and 'poor signposting') accounted for 63.6 per cent of avoidable calls.

Figure 7: **Drivers of failure demand in public service call centres**



This tends to validate the failure demand concept, although the public service centres studied had less of it than might be expected. Also, it suggests that much of it is generated before the call, by poor communication and service design that leaves users in need of clarification, reassurance, or directions towards the right phone number.

The absolute wooden spoon among agencies went to Sandwell Metropolitan Borough Council, with 65.43 per cent of avoidable calls, but this is partly an artefact – an unofficial strike by binmen occurred during Q2 2010, and the surge of calls about missed bin collections were categorised as failure demand. This seems unfair. However, they also logged the biggest source of avoidable calls as 'switchboard', implying that there really was a problem with the centre, which was also among the lowest paying in the dataset.

The Sandwell story does point to an important fact about call centres, probably as important as the random–but–spiky distribution of incoming calls – rather like A&E or a police station, the trouble ends up in the call centre because the call centre has to handle it. When things are normal, self–service on the Web is ideal, but when things break down, the human element becomes important. As a result, there is a limit to how much automation and scripting is appropriate.

Demoralisation by targets

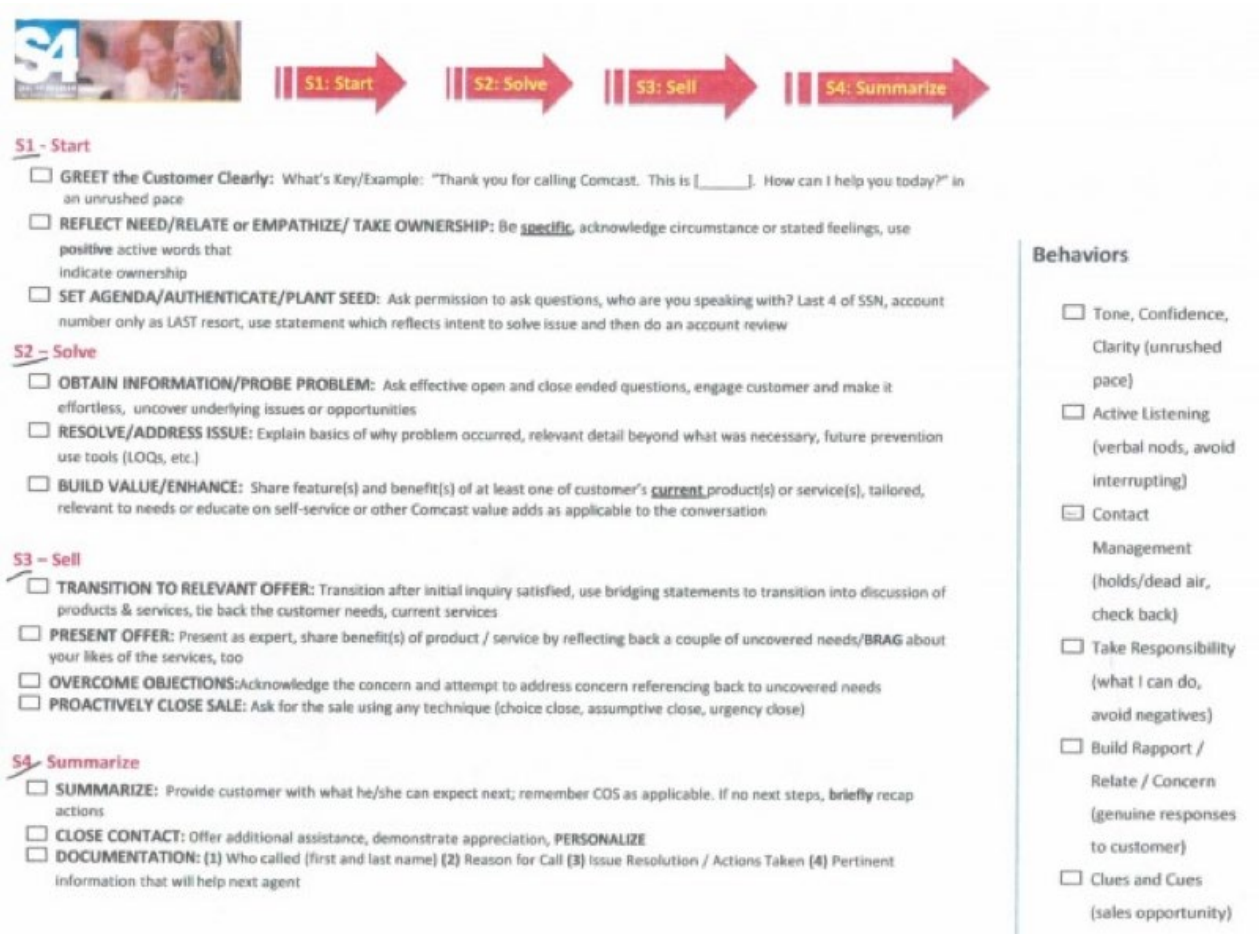
It is a stereotypical feature of call centres that everything gets measured, and what gets measured gets managed. As we have just seen, much of the measurement is of questionable value – improving AHT seems to have a negative impact on output metrics like satisfaction. This assumes, however, that anything real is being measured. In practice, the combination of precarity and surveillance tends to destroy the integrity of the measurements, because people learn to manage the managers. Similarly, managers learn to tolerate this kind of workplace resistance because they are usually ex–call handlers and they fear demotion back to taking calls.

John Seddon points out in *Freedom from Command and Control* that although manipulating the metrics keeps managers off your back, it also contributes to stress in itself. We noted earlier that 'role conflict' is a major cause of work-related depression, and here we see how this works in practice.

Another issue here is that the workplace politics of the call centre also condition the customers to see phone calls as antagonistic encounters, call centre agents as hostile, and the process as a system to be defeated. During 2014, an internet storm broke out after someone released a recording of a call with the US cable operator Comcast,[12] during which an agent tried very hard indeed to stop a customer from cancelling their subscription.

A large part of the problem was that the agents were heavily incentivised to stop customers leaving, on a cliff-edge basis – if they retained 85 per cent of the revenue-generating units[13] at stake, they got a substantial bonus, at 80 per cent much less, and at 75 per cent they got nothing.[14] Their hourly pay was very low. Further, they were briefed that they must try to sell at least one new product in every call, no matter what the customer's problem might be, and 20 per cent of their pay was linked to new sales.[15]

Figure 8: **Comcast CSR training material – aggressively sales-directed and highly manipulative**



The cliff-edge structure was probably designed to use the fear of coming last as a motivator. If so, it worked to train the agents to be ultra-aggressive. It also conditioned the users to change their own behaviour in order to get what they wanted. Here is some advice offered to Comcast customers:[16]

> *As long as Comcast and other companies try to use my own human decency against me, all bets are off...*
>
> *Politeness has its place, but this is not that place. To get pushed immediately through to retention, get mad. You don't have to swear at them—cursing at a call centre rep at any point is a great way to get them to hang up on you—but anger will serve you a lot better here than being nice...*
>
> *If they try to guide you back to a script, get angrier and interrupt them. Raise your voice and talk over them. Demand an immediate escalation to retention—or, if you don't want to be so exact-sounding, demand to be escalated 'to the people who can cancel my account right now.' You often won't even have to give the representative any personal details. Enough bluster and bluff will almost always get you pushed through within 30 seconds. The trick is to be exasperated, angry, and frustrated—but not so angry that you're yelling or threatening. If you have a good extemporaneous reading voice, it might be helpful to write down a quick script.*
>
> *As an aside, this is also an excellent method to bypass a company's unskilled (and sometimes offshored) first-tier technical support and gain access to second-tier support. All you have to be willing to do is be a jerk.*

Interestingly, this emerging folklore of advice about how to beat the call centre closely parallels some of its internal structures.

Customers are advised to immediately terminate the call if frustrated or stuck in the queue – this drives up failure demand and abandoned-call metrics. They are advised to 'always transfer', thus imposing more muda or 'empty work' on the system. In AHT-driven systems, redirecting a caller who has chosen at random from the IVR options actually counts in your favour – a call came in and you got rid of it, very quickly indeed. They are advised to seek out agents approaching the end of their shift, as they have the strongest incentive to close the call so they can leave the office. You might operationalise this by waiting until a few minutes before the top of the hour to call.

Stafford Beer would have said that the purpose of the system is what it does; in this case it trains management to accept a terrible product because they keep their jobs, workers to fake the numbers, and customers to behave appallingly.

The customers are so grumpy because the system is terrible. The system is terrible, in part, because the customers are so grumpy. The system stays terrible because management sees no way it could be otherwise, and to a real extent, workers don't see it as a real job. We have a sort of evil local maximum, a Nash equilibrium, where no party can see a move that doesn't make them worse off.

Decline

I recall walking through Bradford in the late 1990s and seeing a business offering 'call centre training'. At the time, the boom was just beginning and Northern cities were remarkably keen on the industry. What struck me, though, was that the internet/telecoms revolution was well underway and surely the jobs would be exported soon enough. This happened, up to a point. Sending call centres offshore didn't stop their vast growth in the 90s and 00s, although this was the peak era for offshoring generally, and one that offered ever-lower prices for wholesale VoIP capacity.

(There have been various efforts to quantify the effect of offshoring, none very recent, but their conclusions, so far as they are available, are usually that the UK is exporting more ICT services than it imports to the countries in question. This doesn't rule out the possibility of a substantial loss of jobs to offshoring, as the composition of exports might be very different from that of imports, but it certainly isn't evidence for it.)

In fact, the real threat is coming from a different direction. Customers hate call centres, and it is therefore unsurprising that they seek out other options.

Atom Bank, a startup bank based in the North–East, makes a selling point of the fact that it doesn't provide any phone support, interacting with its customers entirely through social media and through its mobile app. Tellingly, the CEO is Mark Mullen, the founder of First Direct and therefore something of a pioneer of financial call centres. A similar business in Germany, Fidor, has some 300,000 account holders and no call centre.[17]

This is an extreme option and it is easy to satirise. Mullen argues that:

> *"Customers who have less contact – face–to–face or voice–to–voice – with their banks are, surprise, surprise, most content,"*

Someone who calls the support line, though, is by definition discontented. They have a problem and want it solved – what John Seddon calls the 'break–fix archetype' of customer service – so it may not make sense to conclude that it's the call centre that makes them unhappy and remove it. However, it is interesting in itself that someone with Mullen's degree of experience thinks the institution might be so toxic that it is the source of customer dissatisfaction, not its solution. As we have seen, just being in a call centre seems to be bad for your mental health. The question here is really whether customers will prefer other channels of communication to the call centre.

Figure 9: **Messaging–based customer support rising**

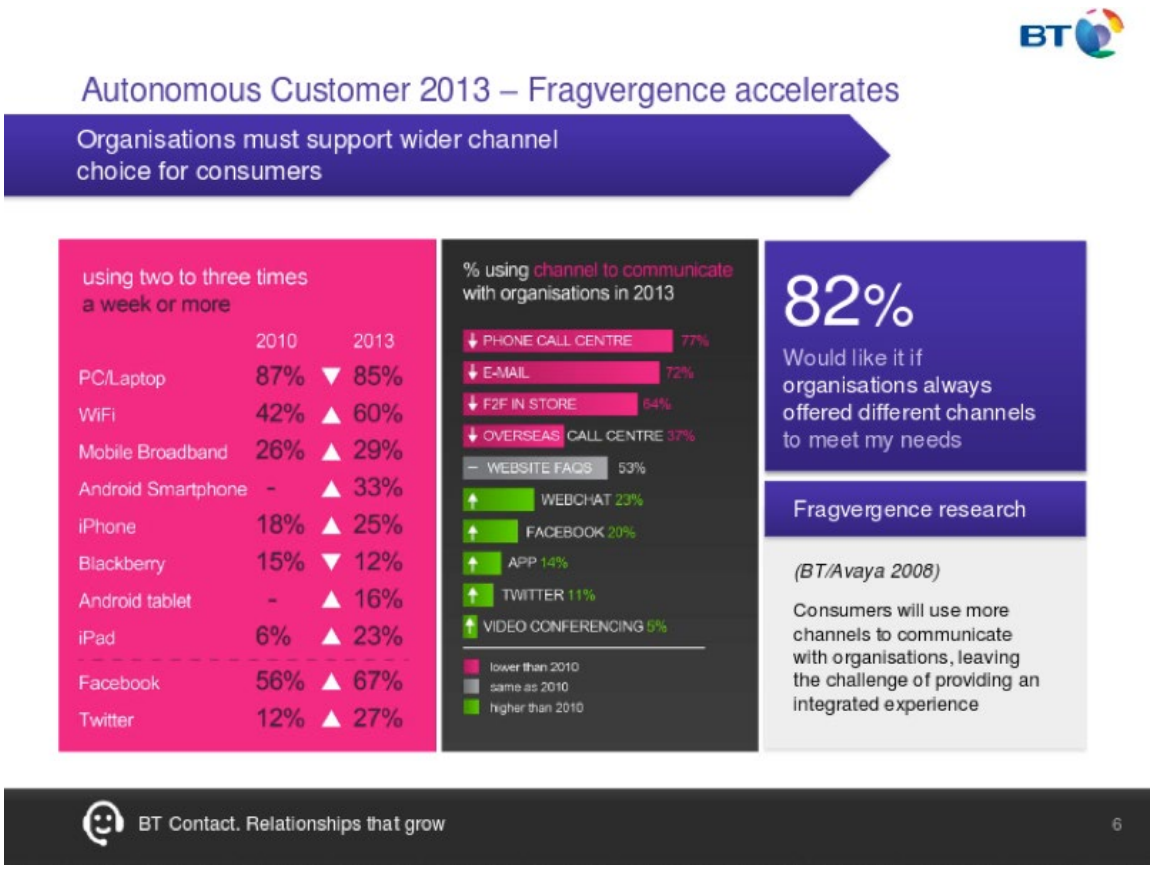
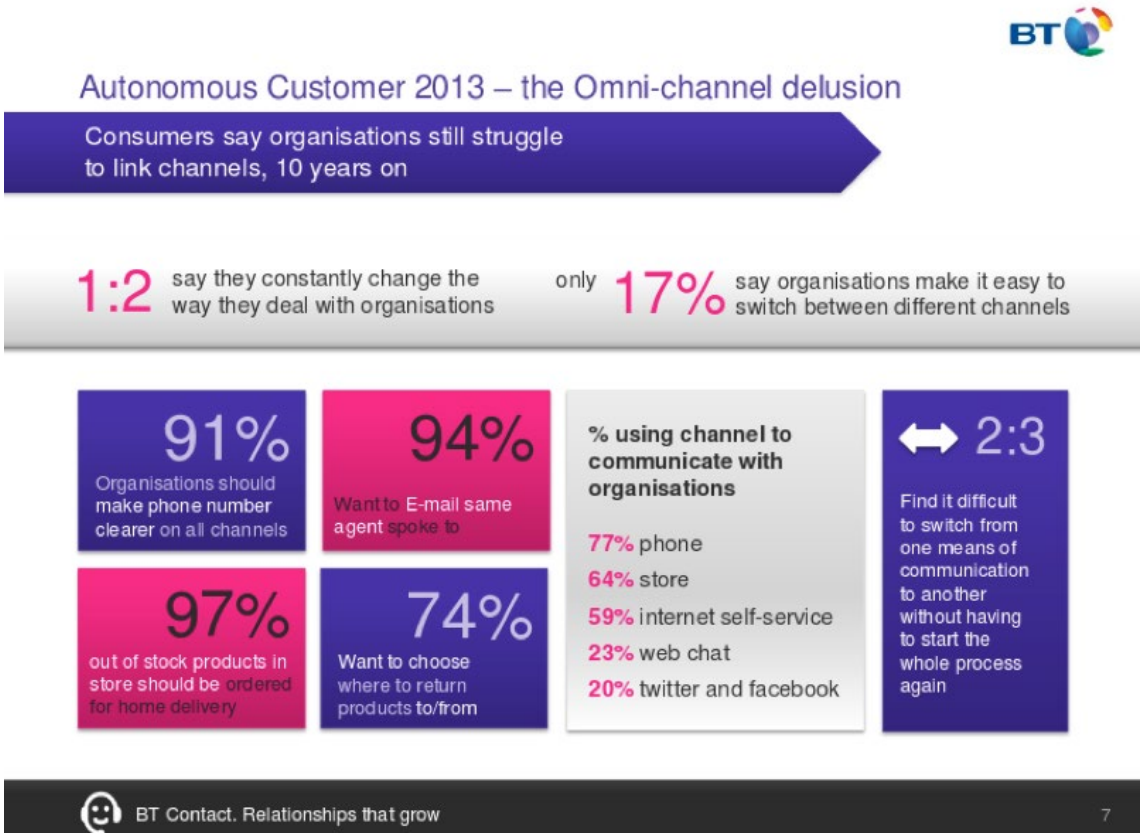


Figure 10 comes from BT's call centre division, showing that public demand for text-based but real-time customer support is rising and that for phone support, falling.[18] BT is at pains to emphasise video conferencing, a more daring suggestion, but this is probably because it is a major product of theirs.

More interestingly, they also point out that the integration between text-based, phone, video, and other channels is terrible, and that the public feels this keenly. I would go further. It is typical of call centre systems that the integration between successive phone calls is terrible, let alone between different communications media. In general, the 'omni-channel delusion' BT complains of is just an expression of the typical call centre user experience.

Figure 10: **Coherence is hard between channels – but it's bad enough within them**

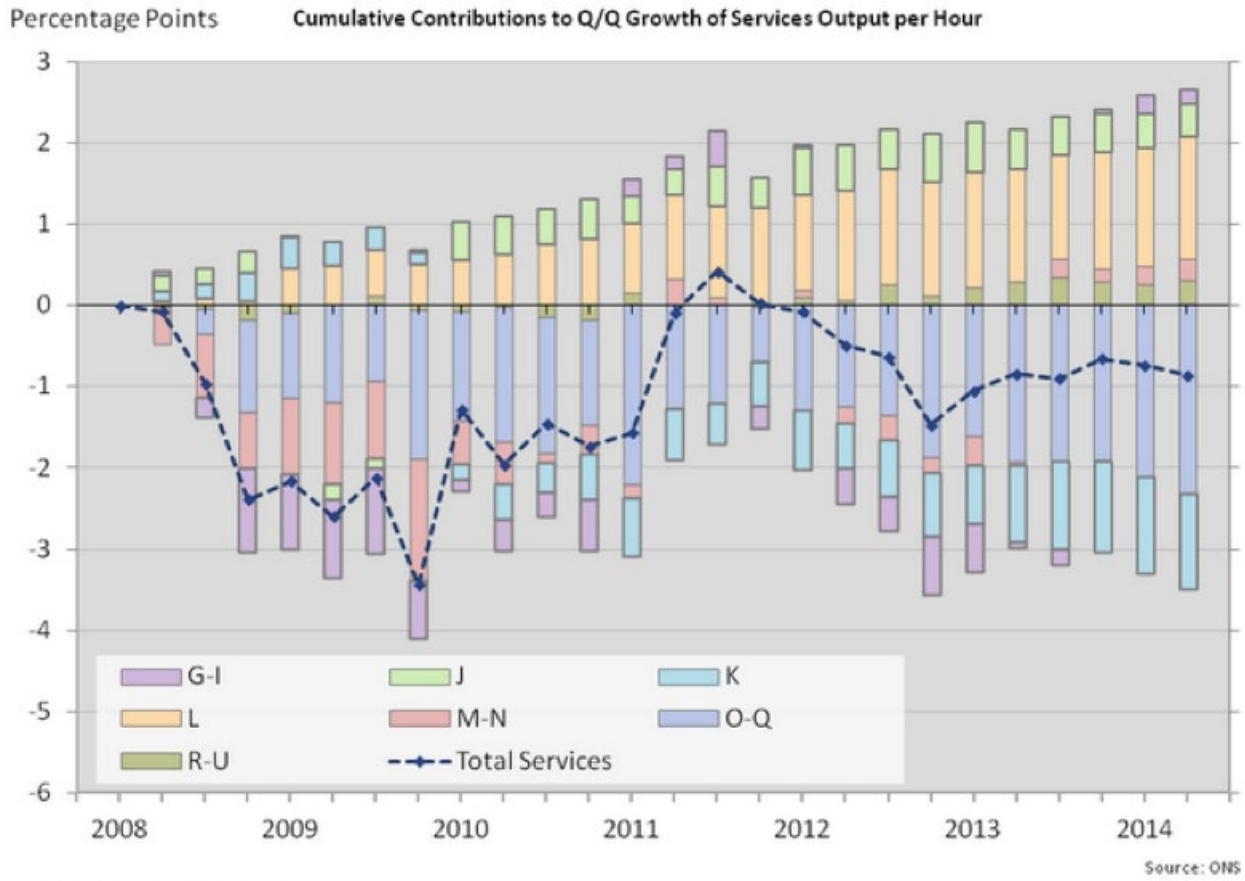


We know that call centre employment peaked in 2008. That was, of course, the year of the Great Financial Crisis, so a first assumption might be that this is cyclical.

It is at least thinkable, though, that this is akin to something like US demand for gasoline, which peaked in 2008 and shows no sign of recovering. Although the terrible macroeconomy obviously plays a role, the reversal of suburban migration, better public transport, hybrid-drive, electric, and diesel vehicles, and many other trends are clearly pushing that way. The crisis dramatised the shift and forced some of the actors' hands financially.

The ONS published the following chart in October 2014, showing the components by industry of service productivity growth. Sector L represents the imputed value of owner-occupied housing (i.e. a proxy for property prices) and can be ignored. Out of the major sectors, G-to-I represents retailing and is barely growing or sometimes shrinking. K, finance, is shrinking. J, telecoms, is growing, but not very much. Government, O-Q on the chart, is suffering (although public sector productivity is poorly measured).

Figure 11: **Only very few of the major call centre sectors are seeing productivity growth**

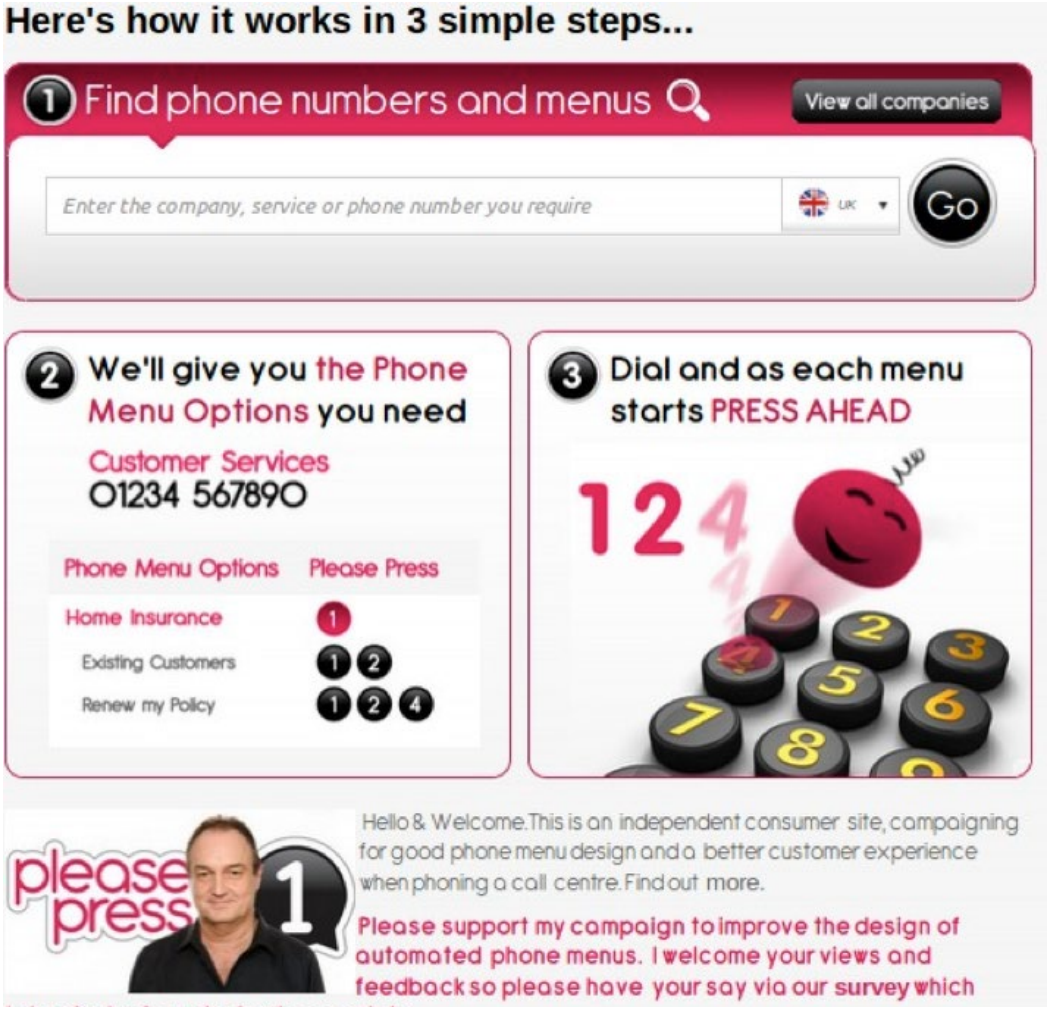


Source: Office for National Statistics

We should certainly consider whether the call centre, in its classic form, might become a declining industry. If the product is usually terrible, productivity is dreadful, and nobody who has any choice wants to work there, why should the industry even exist? Trends driving this would be competition from other channels (text-based, real-time, social media, pure self-service), lower public tolerance (note the increasing availability of cheat-sheets to work around the system), and higher reservation wages (if the macro-economy eventually improves that much). Also, as we will see from the public sector data, it seems disturbingly plausible that the super-giant centres are less productive than small ones, and outsourced ones less so than in-house.

This would be desperate news for somewhere like the Dearne Valley, with its 60,000 call centre jobs and not much else.

Figure 12: **People dislike IVR so much they make maps of them**



From being the future, and then a social problem, the call centre basins might quite soon become yet another crisis.

> *For some reason[19] working in a call centre seems to bring forth fantasies of its destruction, not necessarily in any cathartic sense, though Tristen Black's description of his call centre being swallowed up into a hell portal is particularly fetching, more I'm thinking in the sense of their obsolescence, that one day the whole sorry industry will finally be put out of its misery.*

This is speculative at the moment – volumes of phone traffic are still rising slowly, even if revenue from it is shrinking quite quickly as prices fall – but it is necessary to keep it in mind. Later in this report, we will consider some ideas of what to do about it. But first, we will try to validate some of the classical critique of the call centre, using the large public sector data set we mentioned earlier.

Evaluating the systems thinkers' critique: a large public sector data set

We reviewed the dataset as a whole. N was 1340 after we excluded some evidently spurious data points – for example, Great Yarmouth Borough Council repeatedly reported an FCR percentage as high as 280 per cent, which is impossible. We investigated the correlations between output metrics like customer satisfaction and avoidable calls with inputs like pay, AHT, FCR, quarterly staff turnover, and contextual information like the centre's size in full-time equivalent employees. We defined a 'happiness' index, consisting of the percentage of customers satisfied minus the percentage of avoidable calls, and percentile-ranked the observations.

The results were as follows:

- **FCR** accounts for about 25 per cent of the variation in happiness (a positive correlation of 0.25) and about 23 per cent of that in satisfaction.
- **Pay** accounted for about 15 per cent of the variation in happiness (+0.145) and about 16 per cent of that in satisfaction.
- **Turnover** had no measurable effect on happiness or satisfaction at this level.
- **Training budgets** had no measureable effect on anything.
- We found **no obvious geographic or socio-demographic pattern** – top performers include Wigan, Tameside, Nottinghamshire, the Isle of Wight, Hambleton District Council, Essex, Reigate, and Stockton-on-Tees, while poor performers include Darlington, York, Rotherham, and the Royal Borough of Windsor and Maidenhead.

An exceptions analysis, focusing on the 95th percentile (i.e. top 5 per cent) and 5th percentile (i.e. worst 5 per cent) by happiness, shows this in more detail. We focused in by excluding all centres that didn't report both FCR and turnover, filtering down to 318 data points and identifying the top and bottom 5 per cent.

There is reason to think that the best performers were actually performing well, as the same institutions appear repeatedly in the top 5 per cent. For example, Tameside MBC, Nottinghamshire, and the Isle of Wight between them account for ten placings in the 17 top 5 per cent data points, implying that they performed consistently well. Similarly, the bottom 5 per cent and 10 per cent are characterised by repeat appearances.

The best 5 per cent of centres are distinguished by the following features:

- **Turnover was low** – the average quarterly turnover was 2.25 per cent compared to the average for the filtered dataset of 7.08 per cent, a 1.13 standard deviation result. Turnover was just under half of that observed in the worst 5 per cent, and half of that typically observed in private sector call centres
- **FCR** was reasonable, averaging either 45 per cent or 52 per cent depending on whether you believe one council meant to report 0.9 first-call resolutions, or 90 per cent first-call resolutions. However, this is actually lower than either the mean (64 per cent) or the worst group (62 per cent).
- **Pay** was 14 per cent higher on average in the top 5 per cent than in the bottom 5 per cent. However, the average centre actually paid better than the top 5 per cent centres.
- **AHT** was 10 per cent higher in the top 5 per cent than in the bottom 5 per cent, but substantially lower (30 per cent) than the average. Importantly, the standard deviation of AHT in the top 5 per cent was 1.5 times that in the bottom 5 per cent, implying that the top 5 per cent don't control it, while the bottom 5 per cent do.
- **Top performers are small**. The average top 5 per cent centre has 68 full-time equivalent employees, while the typical centre has 168, and the average bottom 5 per cent centre has 542.
- **They are multiskilled local authority centres**. All the top 5 per cent centres are local authorities. None is a central government department or a task-specific function. None is an outsourcer. The bottom 95 per cent include local authorities, but also the UK Research Councils, the Student Loans Company, and outsourcers Impact and Essentia. Relaxing the cut-off to the 10th/90th percentiles includes the Highways Agency, Consumer Direct, and Companies House in the worst 10 per cent, but it includes more local authorities and only one central function (a single quarter at the NHS smoking helpline) in the best 90 per cent.
- **They invest in training, but this is more complicated than you might think**. The top 5 per cent performers spent £1,776 a quarter on average, compared to £6,597 for the whole data set or £3,350 for the worst 5 per cent. The explanation is not that the training is worse than useless, though. In terms of spend per full-time equivalent employee, the top 5 per cent spent four times as much as the worst 5 per cent. However, the average centre spent 1.5 times as much as the top 5 per cent, so spending more on training is no solution in itself.

We expected that multifunctional local authority centres did worse than specialised services or central government agencies, because local authorities have a myriad of responsibilities to cover. However, this turned out to be the opposite of the truth. Interestingly, the local councils seem to do by far the best, and they very often do so by getting rid of outsourcers.

Wigan Metropolitan Borough Council, for example, didn't make the cut into the final 317 data points because its reporting wasn't complete enough (it doesn't track FCR). However, in the wider analysis, its environmental and housing services accounted for eight of the 49 top 5 per cent results, meaning that it performed at the top level throughout. Its achievement is characterised by minimal turnover, very low (1–6 per cent) avoidable calls, and 90 per cent+ satisfaction. We know that Wigan took the service back in-house around this time. Isle of Wight Council, which was the top consistent performer in the filtered 317 with four of the top eight placings, also seems to have been in-house at the time, as does Nottinghamshire. In short, the public sector call centres seem to bear out a broadly 'Seddonite' view that the social failings of the call centre are linked with its economic failings, and these are in turn linked with the outsourcing, scaling-up, and de-skilling that inhibits its ability to innovate. However, the metrics war and the cult of FCR seem to be significantly oversold, although it does seem that AHT is a pathological metric it is better to ignore.

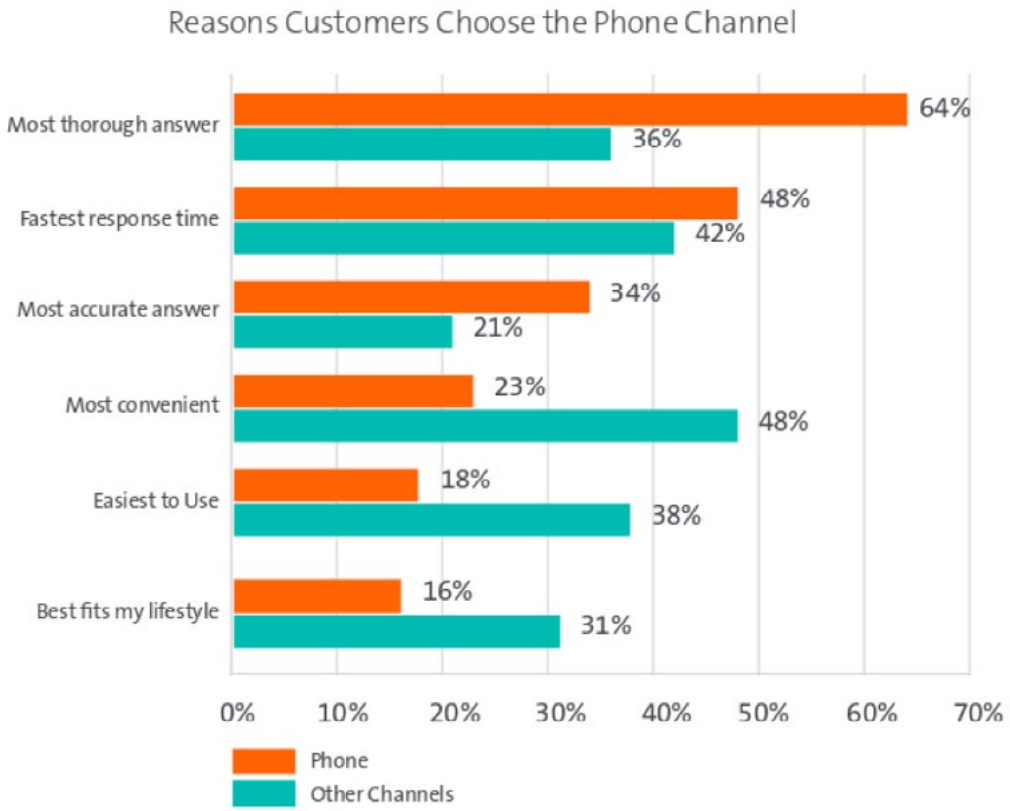
So what shall we do about it?

Escaping from the local maximum: the value of live voice-based service

The essential value proposition of call centres is that they offer live, human response to the break-fix cycle. We can well doubt that companies like Atom Bank will be able to maintain an entirely automated response profile once someone actually has a serious problem. The question is whether the industry can change, or whether its customers will give up on voice-based service and flee, leaving us with a wrecked industry and a succession of horrible user experiences.

It's worth considering why call centres would be worth keeping. Consider the following chart:[20]

Figure 13: **Live service comes into its own when someone has a real problem**



Nobody thinks ringing up the call centre is convenient, easy, or fits into their lifestyle. However, they turn to it when they need action (see 'fastest response time') or they have a real problem that needs deeper attention (see 'most thorough answer'). Various studies cited in the report in endnote 13 suggest that about half of all customers using Web or other online e-commerce/e-service channels will abandon their transaction and phone up instead if they become frustrated.

One way to look at this is that the call centre is doomed to handle the problem cases and frequent flyers, the 'Other (please state)' group, and therefore will always be terrible. But another would be to look at it as a premium form of service, offering a richer product when this is required.

What can we learn from customers' complaints?

In the same call centre industry study, customers' problems were identified as:

89 per cent having to repeat their issue to multiple representatives in different channels

91 per cent because they have to contact a company multiple times for the same reason

90 per cent being on hold too long

The first one of these is fundamentally a software problem. Common CTI (Computer–Telephony Integration) tools don't provide sensible interfaces for passing information between channels, organisational functions, or agents, and they usually don't provide a user interface towards the customer either.

This contrasts with the panoptical stare they provide towards the call centre employees, who are constantly monitored. Users have basically no insight into the service process or whatever data the organisation holds on them, so a major issue in every call is arguing out a common view of reality. The problem here can be caricatured as 'asymmetric visibility'. Customers and workers are denied visibility, while managers are overwhelmed with data (of questionable relevance and utility). The call centre could improve by making its processes more transparent to users and employees and perhaps even by backing off on surveillance.

John Seddon refers to this as the 'management factory', an inevitably imperfect representation of the real, embodied in the metrics that managers use. He argues that the chief purpose of the management factory is to separate decisions from work. As a result, for example, all customers have to go through a single phone number and a multi–layered IVR, and only contact different agents in a specified order. Doing anything else would imply that the call centre agents made decisions about how calls would flow – or even worse, the customers.

The second of these is the failure demand concept again – call centres, driven by AHT and similar metrics, fail to resolve the break–fix cycle and therefore cause more calls. A major driver of failure demand is often that the call centre exists to keep customers away from the people who can actually solve their problems – this is why customers learn to always demand escalation to a manager, and agents learn to pretend that they provide it.

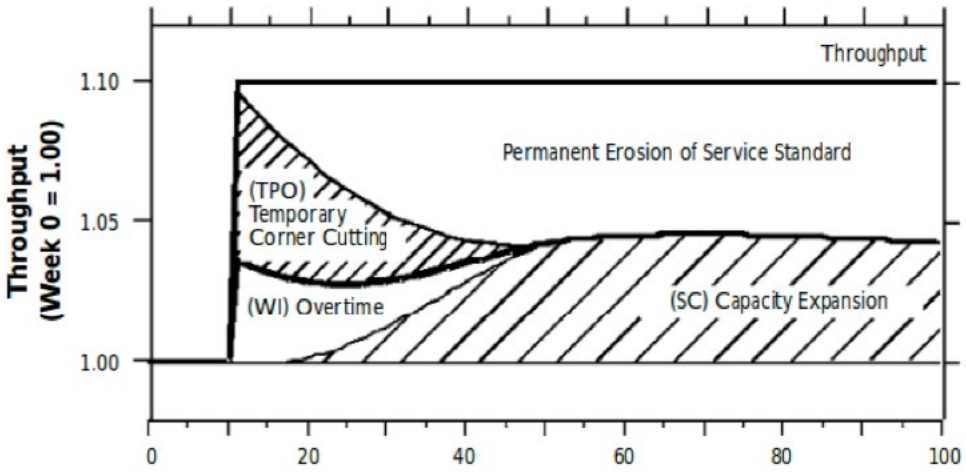
John Seddon notes that this is a common problem, and one that tends to generate failure demand because each step of re–routing, sorting, filtering, etc., creates an opportunity for a mistake to happen. Similarly, the longer it takes to process an instance–of–service, the more likely it is that breakage will occur at some point – the situation will change, something will be lost, duplication will arise.

From a sociological perspective, though, it makes all too much sense that status derives from the number of layers between you and the nearest customer. If being in a call centre makes people unhappy in itself, any device that allows you to deny it is very valuable.

Interestingly, the existence of a queue, itself caused by failure demand, drives worse quality.

In a 2002 paper,[21] Rogelio Oliva introduced the following illuminating chart of the relationship between 'work pressure', which could be operationally defined as the length of the queue, and quality. Rogelio, who studied a London–based bank that operated a centralised lending approval process in a call centre, found that the response to a spike in demand consisted in the short term of overtime, plus cutting corners.

Figure 14: **Increases in the queue lead to permanent reductions in service quality**



Over the longer term, if the spike did not subside, the overtime would be replaced by a permanently bigger staff, but the reduction in quality – the corner–cutting – tended to be permanent. Once cut, managers rarely found it necessary to reinstate a corner. This is probably a case of the process known as the normalisation of deviance.

This, our third problem, is simply down to cost (there is a queue because people cost money) and also to the interaction pattern used. Telephony is a hot medium in Marshall McLuhan's typology – one where it is socially expected that you give it your undivided attention – so holding is unusually annoying because you aren't allowed to get on with life while you're doing it.

One possible mitigation would be a 'call–back pattern', in which users register that they need service and the call centre calls them. This exists in some CTI systems, and a number of startups exist that offer such a thing as a Web service, but it is relatively rare – possibly because it converts the inbound call centre into an outbound one. As we have seen, outbound and inbound working is very different from a sociological perspective. Therefore, this is likely to be one of the hardest changes to deliver, as it touches on the deep politics of the workplace.

Moving towards lean service

The lean service concept, as the name suggests, is inspired by Toyota production and related ideas, all originating in the work of W. Edwards Deming.

In manufacturing, the key lean insight is that no work should be undertaken until a customer requests it (so inventory must be as low as possible and ideally zero), and whatever work is undertaken should be defined by the customer's wishes. At each step of the process, only as much work should be undertaken as is necessary to finish some task.

The extension of the lean concept into services, though, is based on a related insight from Taiichi Ohno's work at Toyota. Mass production usually requires the standardisation of the product and the process, effectively eliminating any diversity from demand. Ohno reasoned, however, that if the marginal cost of changing over the limiting (i.e. slowest) machine tool to a new task could be brought down until it was equal to the marginal cost of producing a car, it would be possible for the whole output of cars to be customised at no greater cost than standard mass production. Because this created commercial opportunities, it would be well worth doing, even if it wasn't possible to actually reach the crossover point.

Importantly, as well as the static benefit of mass customisation, this also provided the dynamic benefit of faster improvement. Any improvement or innovation in the product, after all, required changes in production, so optimising the production process for flexibility rather than scale was a very important step. The importance of this for services is that services tend to involve the customer rather more completely than manufacturing – even if Toyota offers a lot of options on its cars, it doesn't have the intimacy with its customers that the public services tend to. As a result, the innate diversity of humanity pours into demand, and managers strive to canalise it through the IVR.

Moving towards lean service requires the abandonment of asymmetric legibility, and the adoption of metrics that are useful to employees and customers. It requires much better software tools, permitting faster adaptation to the diversity of demand. And it requires a more skilled and more respected workforce, operating in a dramatically different structure.

Typically, lean service projects flatten out the hierarchical structure, and also create new direct entry points so that customers are routed directly to the person who can resolve their problem. Fortunately, as we will see, the technology of VoIP and Voice–Web integration is advancing fast, and the monolithic CTI systems are increasingly obsolete. Many call centres will be facing a capital expenditure cycle fairly soon – on the one hand, the 'iron' PBX devices and early enterprise VoIP systems are becoming increasingly difficult to work with and costly to maintain, while on the other, the shock of the new is passing and managers are becoming ready to adopt new solutions. In the next section we will look briefly at some key concepts, technologies, startups, and practices you will need to remake a call centre.

Barriers to change

A key concept in lean production, and lean service, is 'putting innovation in the line', i.e. ending the canonical distinction between decision–making and production introduced by F.W. Taylor and integrating the process of innovation with that of production. Easier said than done, so let's unpack that statement a little.

In order to improve the service, people must know if it is working well or badly. This means that the centre needs to collect metrics that are useful for the people who carry out the work (it's no use to the call centre agents to know how many of them have been off sick), and present them to them.

Feedback, whether from metrics or from direct experience, is useless without the ability to influence the process. In fact, feedback without levers of change is just more stress. So the tools have to be adaptable. This includes the tools used to collect, analyse, and display metrics. In fact, measurement tools are some of the most important ones in this regard; the primary tool is, after all, just a phone. This means that the front line has to have direct access to people with the specialist skills, like software developers and data scientists, to change things. Ideally, more people in the front line would acquire skills in this line themselves.

Further, both management and frontline employees will have to accept these changes and support them. This is likely to be the biggest problem here. IT managers are notorious for seeing technology projects as a means to the end of cultural change, and this one is no different. Technical change, though, is a prerequisite of cultural change, and there is at least some hope that the process will help achieve it.

Barrier 1, then, is the technology. CTI systems historically tended to be monolithic, difficult to extend, and heavily dependent on scarce core telephony skillsets among programmers. The software was usually proprietary and rarely even exposed as such; the founder of the Asterisk open–source telephony project described a PBX as being a PC hidden in a box with a telephony switch. This tended to mystify the technology, disempowering employees and management alike.

The provision of metrics was dependent on the CTI system, and therefore usually no better. A related issue is that call–centre companies typically didn't perceive technology as a competitive advantage, and therefore tended to see it as a cost to be outsourced. This restricted access to expert knowledge dramatically, meaning that the engineers would only be called in if the system broke down. Traditional telecoms technology tends to do HA (High Availability) very well, so this was a thankfully rare event.

Barrier 2 is the management. Typical call centre objectives are to make the numbers – we've already looked at why the metrics are bad – and to do so at minimum cost. Managers are often promoted from the front line, which is good but tends to perpetuate the problems we have discussed. Cost reduction, or else salesforce management, are the key skills. This doesn't really intersect with improvement. Parachuting graduate trainees would probably be even worse.

Barrier 3 is the culture we've discussed so far. While the job is widely seen as a non–job by the wider culture, and treated like it by the people who succeed in climbing to safety in management, it is unlikely to get any better as a job. Similarly, while the turnover rates remain so high, it is unlikely that anyone is going to build up much of a skill set or that any real productivity gains are likely. And, of course, the enforced adversarial relationship with customers isn't helping.

Seeking solutions to the barriers to change

Addressing Barrier 1, and to a lesser extent Barrier 2, can start outside the call centre, in the ecosystem of companies that provide their technology. This industrial commons is a well-known precursor for innovation.

In the introduction to this report, we looked at some examples from the aerospace industry and the UK government's efforts to support it.

However, it is a long-standing historical phenomenon. Boulton & Watt located in Birmingham because of the variety of metalworking trades that existed there, and when Frank Whittle launched Power Jets Ltd, he was able to find a combustion engineering firm willing and able to take on the jet engine just by walking around the 1937 British Industries Fair, while the automotive engineering firm Ricardo was just down the road when they needed advice on control systems. Later on, the Government-led GTCC (Gas Turbine Coordinating Committee) was used to expand the potential ecosystem of suppliers much more, including a firm from Leicester specialising in shoe industry machinery that developed specialised machine tools.

The problem here is how to develop a stronger industrial commons in call centre technology. At the moment, the UK digital cluster (or clusters) has a strong skills base in Web technologies, VoIP, user-experience design, data analytics, and financial IT. However, it is both geographically and culturally distant from the call centre supercluster. Shoreditch is a fair way from the Dearne Valley, in every sense.

In this case, it is probably true both that the call centre sector needs to get more like the digital cluster, and that the digital sector needs to get mundane. Numerous people have tried to call the top of the technology boom, and they have all been wrong, but it is at least worth thinking what would happen to the East London cluster in the event of a sudden stop of venture capital funding for more entertainment/media/e-commerce mobile apps.

A key factor here could be the public sector, which is, among other things, a massive buyer of call-centre services. We have seen how the government's revival of industrial policy post-2008 has worked for aerospace and automotive. It recently created a Digital version of its Catapult technology centres, which is even intended to have outstations in the North. This is laudable, but it's not specific enough yet.

The lessons from the public sector call centre data we reviewed are clear: smaller, in-house, multiskilled centres with stable teams work far better, not least because they seem to be less unpleasant workplaces, and also because they work more closely with a wider base of suppliers rather than one outsourcer with a monolithic Avaya, Cisco, or Siemens system.

Barrier 1 could be addressed by a supply chain partnership along the lines of the Aerospace Growth Partnership we discussed in the Introduction, anchored on the government's own call centres, managed through the Digital Catapult, and reaching out to digital startups, customer companies, and the trade unions. This could be framed as a way to help local authorities leave their outsourcing deals and take control of their own services, supporting the government digital agenda and also helping to create a skills base for advanced voice services.

An example of this might be the then Ministry of Technology's financial support of the Co-Op Wholesale Society in its project to develop an unprecedentedly large, computerised and semi-automated distribution warehouse in County Durham, on condition that the Co-Op shared data on the project with an industry partnership of other retailers and logistics companies. This was the first 'big-box' retail distribution system in the UK, something that would transform the sector in the 1980s and 1990s. In the US, a startlingly large percentage of the productivity boom experienced in the 1990s was accounted for by the deployment of just such techniques.

This might also help with Barrier 2. As we saw from the public sector data, it's far from clear that spending on 'training' helped much. This may be because the training was directed at the agents, when in fact it would have been better spent on the management. Alternatively, what was termed 'training' may have been better described as 'motivation' or 'turnover management', a fairly common sales-inspired practice. A supply-chain partnership could help to define qualifications and improve skills, rather than just trying to gee up the call rate.

And Barrier 3, the cultural one, requires a cultural response. The involvement of the unions is important to underpin the drive for parity of esteem, but it is also necessary to address the cultural cringe. As such, we think the SCP should be deliberately designed to make the link with the digital sector and to frame the industry as an innovative one centred around service design. This could link, for example, with the emerging service design hub in Leeds, a city practically ringed by major contact centres and home to enormous NHS administrative facilities, and with innovative Voice-Web integration startups such as Crocodile, Twilio, and Tropo.

We summarise our proposed SCP in the Manifesto for a Council on Industrial Service Design that follows.

Conclusion: **Why is there no Council on Industrial Service Design?**

In 1945, the UK economy faced enormous challenges – restoring the fabric of the country after the Second World War, re-orienting the new industries created by mobilisation, fighting the desperate shortage of foreign exchange, and paying for the Attlee government's social agenda. This economic imperative ran in parallel with a wider hope for a better future through urbanism, architecture, and design, made real by the New Towns, the National Parks, and the Town and Country Planning Act.

The two issues ran together with the Design Council, which aimed to do for objects of daily use what the planners hoped to do for the built and natural environments, but also to create products that would be exported to every corner of the world. Today we face a similar sense of reboot. In many ways, the problems of the UK in 1945 included a lot of hangovers from the Great Depression, not just the War. Our problems now stem from the Great Recession or Second Depression.

How should a 70 per cent services economy by value respond to the realisation that its national business model has proven flawed? One answer is to conclude that we need to change that number. But there are good reasons to think that industrial policy tends to reinforce existing trends, helping cars, aerospace, and pharmaceuticals, boosting the existing geographical clusters of excellence.

However well it works, this may not reach either the deindustrialised northern cities or the post-bubble suburbs.

Manchester University's CRESC was right to call for 'mundane' innovation and to criticise excessive focus on the technological frontier. If we are changing the national business model, whatever we do must be scalable (addressing that 70 per cent) and must also address our huge regional disparities. A major task for a Council on Industrial Service Design would be to explore how the policy methods of the technological frontier can be adopted in the relatively 'mundane' services world.

Also, we often assume that 'services' equals 'finance'. This is false. UKTI identified the top three potential growth sectors for British trade in China – one of them is finance, but the other two are transport and travel. However, UKTI didn't put them on their list of priorities, a worrying case of services blindness. Services, after all, are articles of daily use, and tend to be invisible.

Services blindness afflicts many of the actors involved. Management tends to see them as mere cost centres from which nothing can be expected but trouble. Users endure them. Workers stick it out. As a society, we don't perceive these as real jobs worthy of the respect owed to craft, and as a result we get what we expect.

The German export triumph since the early 2000s has been built on the skills (often embedded and tacit) of their specialised labour force, the Facharbeiter. Calling for more apprenticeships and envying the Germans is justly considered a cliché, but the comparison with the deskilled and mocked UK call centre operative is painful. The comparison with their manager – a slave driver terrified of the PBX and therefore unable to implement process improvements, even if they could identify them – is even worse.

The alternative has a name: deep value. It is the knowledge embedded in the industries that make up Apple's supply chain, often built with their cash using machine tools they specify and finance, or in the industrial commons of Germany. In this case, it is concentrated in three areas – software, an indispensable enabler, in skills, which need to diffuse into the work force, and in service design, which applies these to practical processes.

The Council on Industrial Service Design

Our goal:

- To create an industrial commons for the best service exporters in the world.

Our aims are:

- To drive the issue onto agendas and highlight the possibilities.
- To engage customers, technology providers, startups, public services, and trade unions.
- To research and spread best practices.
- To organise hackathons, demonstration projects, and training.

Our key stakeholders are:

- Service design practitioners, notably in the public services.
- Telecoms and technology companies.
- Major customers.
- The trade unions.

Our methods are:

- Agitprop – encouraging stakeholders to complain, to document their problems, and to become conscious of the existence of solutions.
- Field study – carrying out user studies and interviews to understand how services work.
- Rapid applications development – getting stakeholders involved in experimenting and taking control of their technology.

Endnotes

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