

Workers v Robots

'It looks like science fiction,' admitted the founder of Amazon, 'but it's not'. Jeff Bezos was unveiling a prototype de-

livery drone in December 2013. Challenged on how long it would take before robotic mini-helicopters took products from his local distribution centres to customers' homes he estimated five years.¹

Delivery giants DHL, FedEx and UPS then revealed similar efforts. Within a week it became clear enormous effort is now dedicated to solving problems impeding parcel drop-off by drones. The world's biggest retailer in particular has form when faced with challenges like this. Amazon has already invested heavily in robots to replace workers in its fulfilment centres, even buying Kiva, the leading maker of these tools.²

With movement of goods around warehouses and into trucks automated, it is the vagaries of the 'last mile' of delivery that remains a headache. Yet this problem has been solved in the past. For decades, an army of delivery boys shuttled purchases from store to door.

So what makes the economics of delivery drones attractive? An employee driving a van through a sequence of drop-offs can take hours to unload the final consignments. That's no longer acceptable to consumers, hence the need for instant there-and-back fulfilment by a fleet of robo-choppers waiting for each incoming box at the depot. But is there any possibility we could once again channel this growing demand for swift order completion towards an army of local workers? And could that be done in a way that creates genuine opportunity for the workers?

There would be immediate benefits for the companies. A quadcopter can't ring doorbells, enter lifts, confirm an address with a neighbour or perform countless tasks that became second nature to generations of delivery boys. But the economics appear insurmountable; as sectors like retail concentrated into a handful of giant employers, employee protection increased.

Socially this was necessary: no-one should want a return to the infamous casual labour that once characterised dock work, in which breadwinners without

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reports WINGHAM ROWAN

a social safety net were forced to humiliatingly queue at the gates of a port each morning, in hope of getting an arbitrary

awarded day's work.

But, like it or not, we may need to accept that welfare, employment overheads, agency fees and worker expectations have made it extremely difficult to mobilise pools of motivated, cost-effective, on-tap workers for irregular work. The resulting economics are further bolstering the business case for automation.

This factor is common across industries. Take social care, which currently employs up to 1m people in the UK. A regular employee in a care home will soon be vulnerable to technology like Baxter, an empathetic, dexterous, easy-to-teach, mass-produced robot.³ Already, a Baxter can be had for a mere \$25,000 (£15,000) and will run for years.

The cost saving of a care home switching from rotating shifts of a supervisor and ten care workers to a small pool of duty managers overseeing ten Baxters is unarguable. But the irregularities of ad hoc care in clients' homes will defeat a Baxter for the foreseeable future.

This cost/benefit value of humans over automation for decentralised, less predictable, work is clear across the economy. A coach company that runs from London to major cities several times daily will start getting overtures from the makers of driverless vehicles around 2018 based on current progression. Its counterpart specialising in out of-the-way destinations will need human drivers much longer.

In construction, robots are already able to assemble flat-pack buildings to standardised designs. But ad hoc house-painting needs a person. In manufacturing; a high throughput assembly line for custard creams can be economically automated, a small kitchen needing extra hands to assemble 500 cup cakes for a wedding this afternoon can't.

Automation of jobs is causing huge concern. But that battle may already have been lost. A 2013 survey estimated half of blue-collar jobs could be automated out of existence in 20 years' time.⁴ That is a separate issue. The argument here is how humans can be made as cost-effective as possible for ad-hoc

work. An employee carrying out predictable tasks in set location can be replaced. But the hard to control idiosyncrasies of less formal assignments require common sense, agility and personality. Irregular work could be a beachhead against the unrelenting economics of automation.

A POLITICAL U-TURN

Establishing the beachhead would start with a political U-turn. Governments throughout the developed world remain wedded to job creation. In the UK, the DWP's Work Programme of support for benefits claimants and subsidies for employers costs around £1bn a year. The reported success rate of less than 5 per cent of clients who end up in a sustainable job is considered a reasonable return in straitened times.⁵

In contrast, irregular work is too often filed under 'problems' by policy-makers. This area of the labour market is evolving dramatically, fuelled by another recent technology: online marketplaces. Increasingly citizens are running errands for neighbours (TaskPandas www.taskpandas.com), renting out their sofa to tourists (AirBnB www.airbnb.co.uk/), hiring out their possessions (Rentoid www.rentoid.com/) or seeking opportunities on thousands of comparable sites. This form of work is growing by 25 per cent a year according to a Forbes estimate.⁶

What's not to like? Unfortunately, much of this activity is in the informal economy: untaxed, unregulated and illegal. Under pressure from legitimate businesses, regulators are clamping down on these transactions. In April 2014, AirBnB capitulated after years and decided to pay hotel tax in San Francisco and Portland, suggesting it would do so elsewhere.⁷ But the opening salvos of a conflict between governments and exchanges for irregular earnings are just being fired. This is not helping foster ad-hoc workers as a lean, routinely-used resource in the labour market.

Yet suppose politicians could admit the possibility of defeat on 'jobs v automatons' and in the migration of voters towards new, irregular, ways of earning. Imagine employment policy shifted from furiously pushing the jobs count to a more nuanced commitment that 'some work is better than none' and a determination to make ad-hoc work a key component of the legitimate economy. What might follow?

Policy-making should not focus purely on supply. That is the easy part. Already, the DWP's Universal Credit includes 'in-work conditionality'; a ruling that those qualifying for benefits to top-up their wages must start to find additional hours to fit around their existing employment or risk losing the top-up. That will thrust up to a million additional people into seeking odd hours of work. As with jobs, political firepower needs to focus on growing demand, then ensuring its legitimisation.

There would also need to be a willingness to discard the belief that irregular work for multiple employers is inherently inferior to a job. Firstly, there are millions of people who simply can't accommodate regular hours of employment in their life. They are carers, those with recurring but unpredictable medical issues, lone parents, students and people striving to start a home business but needing to earn around sporadic commitments to customers. These individuals who need odd hours of employment to fit around their changing circumstances are largely marginalised by current policy.

But there's a more general point. Consider the life of a 1920s delivery boy. Expected to be resourceful, known to customers by name, he could tout for business among competing shops and may well have picked up extra work doing odd jobs for householders he encountered. A lad with some nous might have seen himself more as a pedalling entrepreneur than a disposable menial.

Contrast that with today's teen worker, perhaps a Work Programme success who has just entered the labour market. Their actions and responsibility could be strictly confined within the boundaries of an employer's Standard Operating Procedures. Human interaction might major on prescribed phrases such as 'Fries with that?'. Hours will be dictated rather than selected.

Neither youngster has significant security or immediate realistic prospects for progression from their current post. But the delivery lad was building resilience, networks and diverse experience. He was learning the skills needed to micro-work at a time when gravitating into a job for life was a reasonable expectation. Today's youth probably face a life of micro-careers but are being expensively groomed to pursue traditional jobs.

An enlightened employment policy could take all this into account. It would seek to make irregular work as available and rewarding as possible; not an either/or with a job, but part of a spectrum of opportunity that individuals could engage with as they wished. It would recognise the economy gains from having quality flexible workers immediately on hand as any bona-fide employer requires. Protection of jobs should remain a priority but it would be joined by ensuring the best possible conditions for those who seek to make their mark by ad-hoc working.

THE RESULT

Government could have a profound impact on irregular work. It is probably the biggest single potential buyer of fragmented labour. Aspirations like personalised homecare, responsive street patrols, back-office functions that ebb or flow with need and on-demand public services all require a well organised, on-tap, workforce rather than giant outsourcing contracts or town hall-based nine-to-fivers.

Policy makers set the regulations, tax code and benefits regime that shapes this market. The state controls databases that prove a person's identity and what functions they are licenced to perform. Politicians oversee agencies that promote work, tourism, business development and investment.

At present, these facilities are unquestioningly structured to support a world aiming for jobs. They could instead, be progressively aligned with the needs of a much more fluid labour market. A catalytic intervention might be the pledge to initiate a service, perhaps called CEDAH: Central Database of Available Hours. Predictably, there is already a state-backed database of available jobs: Universal Job Match.⁸

CEDAH would be an official website in which any citizen could list the types of work they wished to do. Those requiring vetting would entail a check; a putative babysitter might need to be on the existing database of people cleared to work with children before entering the market for instance. Each person then defines any hours they are available for work on a given date, including today.

CEDAH will also ask for the terms on which they will accept bookings: how far will they travel? With how much notice? Do they have a minimum booking length? Finally it needs to know how to construct their personal price for each potential booking. Users can also list items they wish to hire out and their available times: a bike, evening wear,

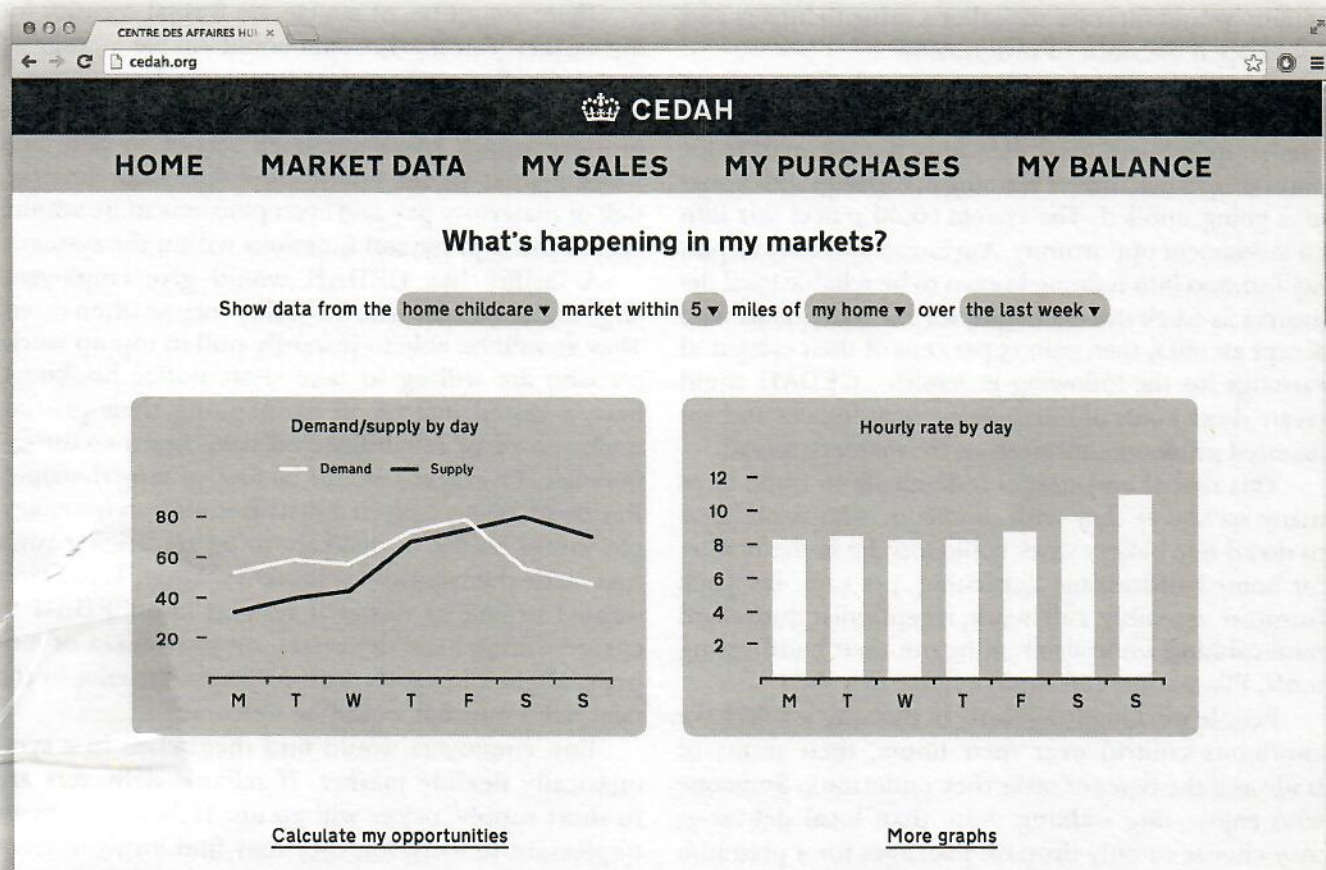
a barbecue set or anything else for which there may be a market.

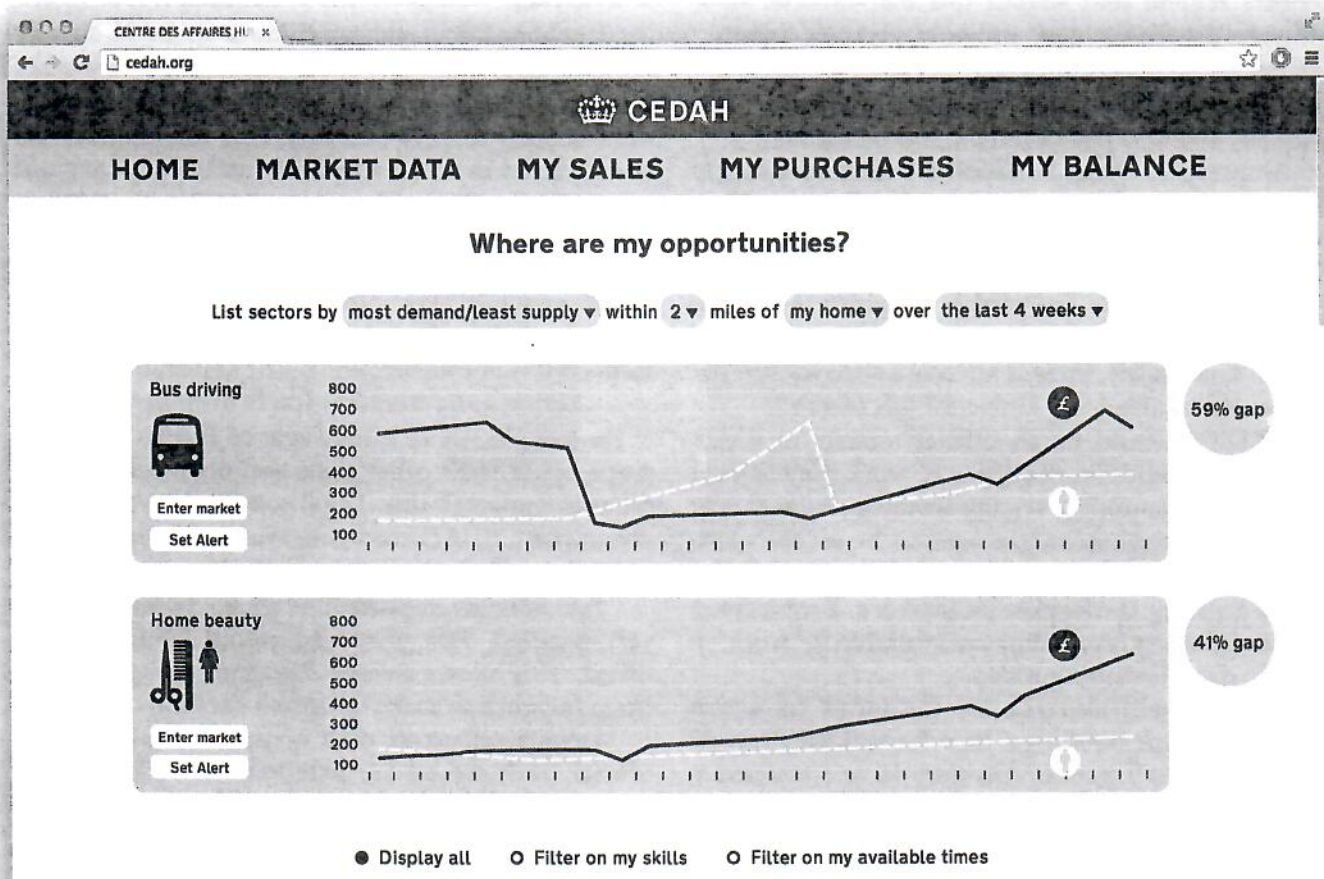
Any bona fide buyer can come to CEDAH, specify a requirement such as 'I need a qualified care worker to assist my mother to the shops today'. The system will instantly display everyone who is available, can be contacted in time and whose terms show they will accept this booking. The system constructs each person's rate for that specific requirement.

The buyer simply clicks on the worker(s) of choice and CEDAH informs each individual, waits for their confirmation and offers alternative arrangements if it is not forthcoming. The system deducts tax as it electronically transfers funds from buyer to seller on completion of a transaction. But its scale and scope could slash other costs and open up opportunities to outweigh this. Legal compliance would be a given with CEDAH enforcing minimum wage, breaks and other rules.

Two benefits in particular would be unique. The very detailed data produced would be freely published. This allows anyone doing, or contemplating, irregular work to make informed decisions.

Anyone selling in such a system would gain an official track record of their reliability. This would be objective – based on successfully completed and paid for bookings, not subjective; reliant on counterparties writing nice things about the individual. A record of reliability, even if built up in relatively lowly





activity would increase the seller's value to buyers and could open the door to progression.

This can be illustrated by an example. Data output by CEDAH might show the Doncaster area currently over-supplied with local deliverers but the market for multi-drop truck drivers running at capacity with bookings going unfilled. The system could parcel this into an investment opportunity. Anyone who wishes to put, say £50,000 into training known to be reliable local deliverers as truck drivers might, for the individuals who accept an offer, then gain 15 per cent of their enhanced earnings for the following 12 months. CEDAH could create these kinds of micro-investment indices and automated products constantly as the market evolved.

This model encourages individuals to trade in as many sectors as they wish. Someone who is on hand to do ad-hoc bakery work could also be in the market for home-hairdressing, gardening, pet care, flat pack furniture assembly, café work, receptionist duties and mini-cabbing while also renting out their hairdressing tools, Playstation and storage space in a shed.

People working irregularly in this way would have enormous control over their hours, their terms of trade and the types of tasks they undertook. Someone who enjoys dog walking more than local deliveries may choose to only drop off packages for a premium rate. If they are demonstrably reliable the market may still pay it, particularly at times of peak need.

There would be, of course, no formal security for the worker. But market data could enable a range of innovative financial services to emerge from competing suppliers. Actuarial analysis of any individual's future earnings based on track record to date and wider market trends could allow levies for holiday, sick or maternity pay and even pensions to be administered through payroll functions within the system.

A facility like CEDAH would give employers, large and small, the true flexibility they so often crave. They should be able to instantly pull in top-up workers who are willing to take short notice bookings, have a vested interest in maintaining their pristine track record of reliability and have multi-sector experience. Overheads would be low, pricing dynamic. Residents living next to a distribution hub for example would be the most likely to be set pricing rules that made them cheap for those bookings. If Amazon wanted to link its dispatch systems into CEDAH to ensure willing local deliverers, on push bikes or mopeds, aligned instantly with packages arriving in the next half hour that would be welcome.

But, employers would find themselves in a symmetrically flexible market. If reliable deliverers are in short supply, prices will go up. If Amazon proves unpleasant to work for, they may find locals instruct CEDAH to up the price at which they will deliver the firm's parcels. Strategically, Amazon would be well

advised to book pools of local ad hoc workers for induction and welcoming sessions at the distribution centre, cultivate those pools perhaps with training or rewards for the continuously reliable.

GETTING READY

It is an irony of the UK labour market that sophisticated technology required as the core of systems like CEDAH has already been funded by disparate parts of government. But it needs significant scale to show its potential and that isn't going to come until a government body puts its head above the parapet and invokes the true range of possibilities for working in the 21st century. That commitment could emerge first at city, regional or national level. But it starts with an insight. Irregular work is not necessarily now a killer of jobs; it could be a way of growing the labour market while providing a personalised ramp into formal employment for so many who can't get a foot on the ladder at present.

Government is pivotal in the labour market, intervening at all levels in the fight to sustain jobs. By continuing to do so, as the likely extent of automation becomes clear, it has unwittingly picked sides. In brutal cost/benefit terms; labour now has to compete with robotics. By focusing disproportionately on sustaining traditional jobs, politicians are keeping labour both high overhead and inflexible.

It may be time for a blue-collar labour market that competes aggressively with the machines. That should not be done by slashing workers' conditions as some suggest. It requires a broad spectrum labour market which includes pools of instantly accessible, motivated, reliable individuals ready to intelligently complete all sorts of tasks on their own terms.



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