

IT – Real Simple

A White Paper by Richard Christou,
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IT-REAL SIMPLE

“Some problems aren't glamorous, they just need solving.” This is one of our favourite comments from the group of European CEOs and CIOs we recently asked about their expectations of IT. They also told us that they don't want to see IT: they just want it to work - invisibly. We agree. And the good news is that there's a movement sweeping through the IT industry that meets these pleas head-on. Dedicated to removing needless complexity and cost, industrialisation is bringing fundamental changes to the way IT is delivered. It's bringing greater realism and focus, and helping organisations move much faster and further with their business plans.

At the heart of the industrialisation movement is the stark fact that around 80% of the IT needed in any business is standard. When you need a new system, the chances are that it has already been built - often many times over. It's effectively a commodity. So why start every project with a blank sheet - and a blank cheque?

If you could benefit from commoditisation of the 'standard 80%' in your business, you could redirect your IT investment to the 20% of IT that does need to be unique, and where your business can really score - in innovation, service excellence and differentiation.

It takes a shift in perspective to recognise that large parts of your infrastructure can be supplied by common components. But once that shift has happened, the benefits flow - repeatedly and predictably. It's a small shift, but one with massive implications.

DOING AWAY WITH THE BLACK ART

Anyone who is responsible for buying or operating IT can be forgiven for feeling cynical about the airy promises of the blue-sky merchants. “Everything can be done with IT”, they say. For years almost every solution has been bespoke. This was partly because building and supporting IT looks like such a mysterious process. The brainwork that went into systems stayed in the heads of the people who developed them, and the 'intellectual property' never took any tangible form.

In IT we've long had a taboo about appearing to offer predetermined solutions. We want to respect our users and not prejudge their requirements. Our heart's in the right place. But we're wrong to think IT is an all-or-nothing proposition. The true choice isn't between a fully tailored solution, lovingly crafted by hand, and a cheap-and-cheerful, one-size-fits-all job. In reality, we can produce systems of stunning quality and fitness from standard components. That's what we mean by 'industrialising IT'. And it's what mature industries do every day.

Take the automotive sector. The car changed society because the techniques of mass production brought ownership within the grasp of everyone. Large-scale infrastructure initiatives such as the development of highways and filling stations supported growth. Today, the automotive industry offers a vast array of product options and is nearing its goal of mass customisation; the ability to 'run off' a personalised vehicle to match a customer's order. Every car that is built without a known customer is regarded as scrap. There are no 'solutions looking for problems' in the auto world.

The auto industry hasn't achieved this state of refinement by throwing more people at the production problem, or by constantly reinventing its processes. It has focused on architecting its operations around finite sets of components that can be combined in multiple ways to produce apparently infinite sets of possibilities.

Mature automotive companies have relentlessly pursued continuous improvement, searching for tiny improvements in process, speed, reliability or understanding that will make the end product more reliable for its end-user.

From these components, every kind of vehicle becomes virtually available. Buyers can design their own products, learn the exact cost of each option, and know when to expect delivery. From the manufacturer's point of view, the technical range is constrained at the component set and the rules governing the set. The cost, lead time and build process for every component in the set are known and understood.

At last, the IT industry is starting to emulate the automotive industry in the delivery of repeatable, configurable products. In the same way, we can reduce the effective complexity in our IT by 'boxing up' meaningful chunks of technology. The power and performance is all still there, it's simply tamed and caged.?

Draw the line. And move on.

CIOs and other senior IT managers should know that the 80/20 rule means that every time they embark on a new project, 80% of the infrastructure they need already exists. The problem is, they don't know where that 80% is. It doesn't exist as a separate, bounded entity. As a result, the existing capability ends up being respecified and rebuilt – and paid for all over again.

If you could nail down these common elements, then you could reuse them. Even better, you could begin to identify further elements that should join the common infrastructure set. The more activity you can consign to the 'business-as-usual' part of your IT portfolio, the more you can invest in your business's differentiators. You need your best brains trained on future opportunities and investments, not keeping the show on the road.

Draw the line. And move on.

Perform this analysis on a continuous basis and the value of the 'novel' - 20% - side of the line grows exponentially. The more activity you shift into the realm of repeatable, measured, transparent processes, the more resources you free up to invent new differentiators. Or take new markets. Or deepen your customer relationships. You create space for everything that really matters. What used to take a miracle becomes a matter of routine. And you start paying bread-and-butter prices for bread-and-butter activities. It doesn't mean you can't have bespoke systems - of course you can - but they only need to be bespoke in 20% of your business, where it matters. The rest is just commodity.

Once you have identified the 'standard 80%' and committed to managing it as a core resource of the business, you can work on further optimisation. Ideally, you not only want to remove duplication when you commission technology, you also want your technology base to offer better serviceability and lower operating costs over a long lifetime. Cars have become cheaper to buy but also more reliable and robust through industrialisation, with advanced management systems and self-diagnostics increasingly built-in. The equivalent in IT is the system designed for light-touch support, so that operating costs - and therefore lifetime ownership costs - tumble.

In Japan, industrialisation is well established. Japanese businesses have been benefiting from industrialised components for some time, paying less for their infrastructures, having them deployed faster, and getting better performance from them.

Business is tough enough as it is. Why make life any harder? Draw a line around the functionality that's keeping the lights on, standardise it, and forget about it. You've got better things to do.

The enemy is complexity. That's the opportunity.

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THE WATERSIDE MEDICAL CENTRE

We can use these developments positively to transform the way the healthcare sector deals with patients. One example is the Waterside Medical Centre in Portsmouth.

At the Waterside, patients can choose to be seen on a “walk-in” basis. Rather than being seen by a Gp or nurse in a consulting room, with the professional turning away to use a deskbound PC or leaving the room to consult other sources, the staff move around the patients. Using handheld tablet PCs or laptops, doctors and nurses can engage with patients with complete concentration, knowing that all the information they need is at hand. The secure wireless network at the centre ensures that patient information meets patient at the time and place of need. According to Dr Matthew Davis, “A consultation is best when it’s a continuous, uninterrupted flow of information. I can hear what they’re saying, I can explain what’s happening, and I can get on and treat them.”

Productivity in the walk-in clinic has risen sharply, with more than 80 patients being seen in a typical day.

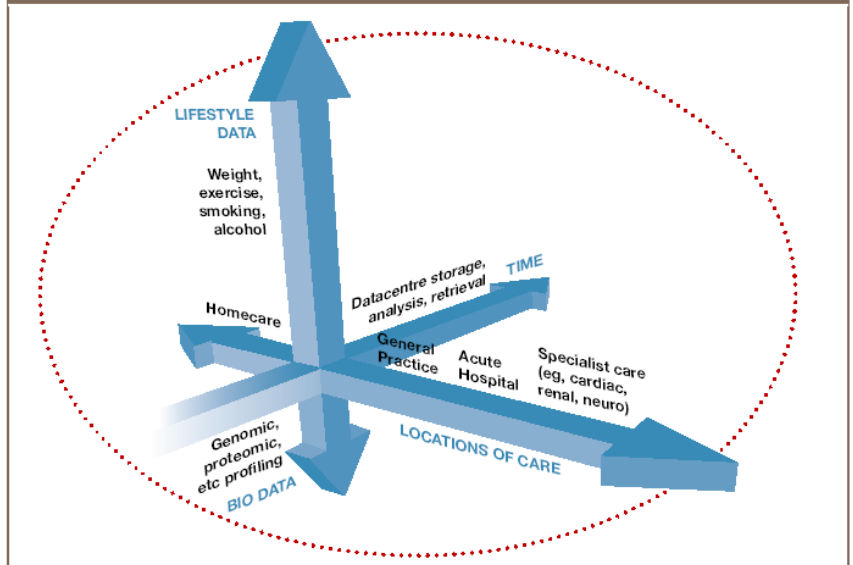
patients say that they like being able to see all their information on the doctor’s device: it’s much easier for patients and professionals to work together and for patients to retain a sense of personal ownership of their care. The centre’s approach facilitates the team-based approach to care by enabling its staff to work around the needs of patients. It also responds to people’s lifestyles by making the walk-in option a normal means of access. And it’s exploiting IT to create a responsive information environment that works reliably in the background to put patient needs first.

The same kind of thinking is taking hold in secondary care and acute services.

AN INFORMATION MODEL FOR GREATER CONNECTIVITY

While connectivity initiatives are gathering pace, there’s still a long way to go. For example, if every consultant’s outpatient clinic had automatic read-only access to GPs’ records then they would save between 30 per cent and 50 per cent of their time. These are the estimates that consultants give us, based on their experience. Simple access of this kind would radically improve throughput. As an investment in healthcare capacity, this facility compares more than favourably with initiatives in recruitment, training or flexible hours.

FIGURE 2. THE 3D HEALTH INFORMATION MODEL



We advocate an approach that we call the 3D Health Information Model (3DHIM). This is a basic ground-plan for the development, procurement and tool for making decisions – and demonstrating the rationality of those decisions. It’s not a template for any type of system, nor is it a set of rules about how systems should work or work together. It simply specifies how IT initiatives contribute to the business goals of the health system and ensures that every investment can be assessed for its relevance to patient and provider needs. The horizontal axis of the model represents locations of care. These are the places where patient and health system meet, either physically or virtually. The spectrum runs from the home, through primary care and secondary care into specialist care. The entry and delivery points of care are expanding all the time, and it’s important that our systems recognise the different requirements of each point while making information available across all of them. This is also the dimension where the foreground attributes of technology are most apparent; because it’s here that we’re considering devices, access routes and usability options. The vertical axis represents a range of patient data. This is the domain of ‘patient records’ as we have come to understand them and encompasses the full medical history of the individual. But this dimension also incorporates data from investigations and, increasingly, relevant genomic information.

Any model runs the risk of looking like a solution rather than a tool. The 3D-HIM is not a point solution but a readily usable way of articulating information flows, IT requirements and process redesign. It's a means of debating priorities and directing investment, and a framework for planning confident, stepwise, targeted change.

As the number of investigatory techniques continues to expand, the range of attributes covered by this dimension will grow, particularly as the costs of various kinds of imaging fall. Similarly, the availability and utility of genomic data will grow in line with increasing clinical knowledge. Information about the patient's lifestyle choices – such as smoking or alcohol use – is also represented here. The third axis represents time. All the information in the model can be expressed in terms of a timeline following the individual from birth to death. Using this model, any individual record will tell the patient and his or her carer how he or she was cared for during a particular event at a specific time and place. Continuity of care across different locations of care is easily audited, as is the evolution of a treatment plan over time. Every salient piece of information has a home in this model and is available to every process that needs to take it into account.

BEYOND THE THIRD DIMENSION

The 3D Health Information Model is a key tool for moving the sector forward but it can also be expanded to serve wider societal needs. In the first place, organisations that interact with the healthcare sector could be included in the model. So, for example social services could be triggered to carry out an assessment of the need for help of a non-therapeutic nature – such as meals on wheels. The increased attention being paid to connectivity between healthcare, education and social services in the care of individuals is also relevant here. From the point of view of public policy, the growth of databases organised around the 3D-HIM principle will provide insights into social trends, performance variations in the system and the emergence of effective new therapies. This kind of accurate planning information does not exist at present and so, today, future services have to be decided on a combination of forecast needs, professional opinion and citizen pressure. The 3D-HIM will make real information about real outcomes in real cases available on a truly comparable basis, exposing, for example, which channels generate the speediest and most effective resolutions of patient needs. Supermarkets have been able to abandon theorising about what might sell if it's piled high enough at a cheap enough price, turning instead to gleaning insights into what customers want and making those goods and services available to them just in time. This is the kind of lesson that the healthcare profession can take from commercial practice. It's not about trying to standardise patient care, or 'dumbing down' professional practice: it's simply about matching skills and resources to real needs. If this principle is grasped at the strategic level then, as a community, we will be able to transcend the seemingly depressing economics of healthcare, improving performance without piling on new infrastructure. Imagine, for example, an analysis of 3D-HIM information that exposes which channels, therapies or advice have the biggest impact in limiting the development of type II diabetes. Such a discovery would almost make blanket screening programmes redundant, saving enormous amounts of time and money – and improving patient care.

The key to the really meaningful future enhancements in healthcare may not lie in molecules, or surgical techniques, or lifestyle modification advice, but in the objective analysis of the combinations of activity which produce the best outcomes in practice. Healthcare management will then become truly scientific, economically transparent, and politically accountable.

COMMUNICATING THE MODEL

Any model runs the risk of looking like a solution rather than a tool. The 3D-HIM is not a point solution but a readily usable way of articulating information flows, IT requirements and process redesign. It's a means of debating priorities and directing investment, and a framework for planning confident, stepwise, targeted change. If it is adopted by the healthcare sector, it will provide for the first time a solid management connection between the contribution of IT and health outcomes. Above all, the model is a neutral and objective platform for facilitating discussion that keeps healthcare professionals in control of the development agenda. The IT industry produces great products and services: but it shouldn't be put in charge of healthcare. The collaborating disciplines that make up modern healthcare, jointly focused on the welfare of the individual patient, are best placed to decide how and where money is spent on developing the system of care. The 3D-HIM puts the healthcare community firmly in charge. There's no room in it for technical obfuscation, or inflated claims. It's also a model that IT suppliers can work with, applying their strengths without having to conform to a rigid, low-level architecture but denying them the opportunity to force self-interested proprietary products into the market. The model can make a difference – right now. It provides an excellent basis for assessing the contribution of existing systems or planned initiatives. It creates a context in which different interest groups can discuss their goals and negotiate their collaborative activities. It also provides a baseline against which supplier claims can be challenged or verified. But perhaps most importantly, the 3D-HIM provides a lens through which anyone involved in healthcare can re-imagine the system working around the patient. The patient becomes the focus of the system's concern rather than a burden on the system. People are no longer seen as packages of symptoms being shunted around a complex factory or supplicants who must be crudely graded as to need so that budgets are not blown. Instead, the healthcare system becomes a flexible care environment that reconfigures itself in real time according to the needs presented to it by patients. Once this perspective is enabled, it becomes less easy to implement systems or design processes that meet institutional needs without also meeting patient needs. Patient-centred thinking becomes the default behaviour in information systems – just as it has always been in the caring professions.

Whose **OPINION?**

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Lester is our chief medical officer, responsible for all clinical matters relating to our work with the nHs and the wider health economy. He graduated from Southampton university Medical school in 1983 and worked in a variety of hospital specialities until 1990, when he became a partner in general practice. He was awarded an MBA in 1997 and left full-time general practice in 2001 to pursue a broader business career, including a post as medical advisor to nHs Direct, expert witness in personal injury claims and medical advisor in clinical negligence cases. He also originated and co-founded a medical consultation website, e-gp.com, which provided advice and information online. Lester remains a practising Gp, working part-time in a busy south-coast general practice.

YOUR OPINION

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