Jim Noble

Senior IT leader and Mentor

Jim Noble is co-founder and CEO of the Advisory Council International, a non-profit organization advising senior IT executives. Previously he was Global CIO of Altria Group (Philip Morris, Kraft and Miller Brewing), Global Head of IT Strategy for BP, Chief IT Strategy Officer for General Motors, Managing Director of IT for Merrill Lynch, and Director of IT at General Electric. A regular keynote speaker, Jim is widely acknowledged to be one of the industry's foremost thought leaders. He was awarded CIO Magazine's annual award in 2012 for innovation in IT.

Jim is a trusted advisor to Capgemini's North American Business Unit on selected strategic initiatives. In this interview, Jim expresses his insights and personal views on various aspects of Application Landscape Management.

Q. From your vantage point as an academic and mentor for senior IT executives, can you provide an overview of best practices that help IT organizations make a top-line center like impact?

A. Let me start by saying, it is dangerous to generalize here because the people I coach and the CIOs I interact with, all have different situations in their companies. Some of them are simply corporate overseers of their company's IT strategy, whereas others have full end-to-end responsibility worldwide for all IT divisions, all of the operations and innovation.

One of the approaches that I found to be the most successful is called the Balanced Scorecard which was originally developed in the 1990s by Kaplan and Norton at the Harvard Business School. The Balanced Scorecard is a really good framework because at the very top is shareholder value. It then decomposes into the contributing components of shareholder value which in my view are revenue growth, margin growth and perception or brand image, and from underneath that, you can imagine the pyramid builds out. It is an excellent way of linking cause and effect. I found that even a CIO who's remit from the executive team in their company was

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simply to look after the back-office corporate systems like HR, legal and finance can use the Balanced Scorecard to say to their executive team (to use a ludicrous example) "let me show you how investing in a new e-mail system is going to drive shareholder value".

The exercise of trying to link cause and effect is extremely helpful because it allows you to get the business people on your side. It is also helpful because it stops you doing silly things. So if you are an advocate, for example, of collaboration or mobility and you are going to drive these initiatives, it is a big 'wake-up call' to put them on the Balanced Scorecard and be able to convince people that there is a connection to shareholder value. If there is no connection to shareholder value, why on earth are you doing it?

The example I would give you is when I was at General Motors (GM) where my natural inclination was to help them sell more vehicles. Wouldn't you say that's sensible? But the reality was, we were making a loss on every vehicle we sold. So by selling more vehicles, it was only going to increase the loss. Therefore I had to understand where the value lay in the Balance Scorecard. The value lay in the pull through of spare parts and other value-added services.

That led my team and I to OnStar. Our team developed OnStar at General Motors because we had all the ingredients. We had world-class call centers; we had great telecommunications capabilities; and we effectively ran an internal concierge service for IT support. Extending this to the vehicle wasn't an automated service like you get today, but it used the human beings in our call centers to help the driver find a ticket to a concert or be guided to their destination.

The team also invented Covisint which became the procurement aggregator for many of the auto companies including Ford, Chrysler, Renault, Nissan and others. The Balanced Scorecard kept us honest because otherwise we would have been doing IT initiatives rather than things that made a difference to the business.

While at General Motors, I sat in meetings where we discussed whether GM should be a manufacturer of vehicles or a supplier of transportation services – these sorts of discussions were extremely IT rich. Now what's happened since then is that Uber has come in and become a supplier of transportation services. I just checked today General Motor's market cap and it is $54 billion whereas Uber's market cap is $43 billion. Who would have thought that technology would have enabled that to happen?

My advice to any IT leader would be to become a trusted advisor to the business. Additionally, the IT team has to be embedded within and be respected by the business as knowledgeable people, not people who live in some corporate center or worse still, in some distant shared service organization. IT must be embedded and its leadership must become trusted advisors to the executive committee.

Q. How does one strike a balance between business alignment and IT effectiveness? How do you measure that impact and how do we keep raising the bar on both of these fronts?

A. That is a great dilemma for any IT leader because you learn the hard way, that IT effectiveness is your ticket to the game. Some people believe that they can ignore that and just be disruptors, innovators or thought leaders. I have never seen any CIO being successful in leapfrogging the intermediate state which is, you have to run the business

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Gartner Group calls this Bimodal IT. My own interpretation is that bimodal is about running the business and changing the business. Running the business is a chore. We IT specialists are not great at doing chores or commodity work. What you need to do is to parse this work out to people that you can trust, including third-parties. Today you can do that in a granular way with web services for example.

We took this to an extreme when I was CIO for Phillip Morris and Kraft Foods, when they were both part of the same company (Altria Group). At the time, we had set-up a separate legal entity called TecWorks to run IT operations for both the Phillip Morris and Kraft Foods business. This organization was governed separately with its own metrics based on using real-time analytics to see how well it was running operations. The business dashboard was couched in business terms and reviewed every month with the executive committee. For example an element of the report could be that in the last month we suffered seven minutes of unplanned outage of our financial system. The business would ask if the issue impacted the General Ledger at a month end, and if the answer was negative, then the discomfort would be low.

Conventional outsourcing in my view, is a lose/lose situation and General Motors is a really interesting example of this. At GM, I helped coordinate spinning off EDS and moving to a multi-vendor outsourced model. Now the current CIO has reversed that approach and is bringing it all back in-house. In my view, the reason he is doing this is because the buy-side (in this case General Motors) progressively becomes deeply disappointed with the lack of innovation from the sell-side (the vendors). If you engage in conventional outsourcing contracts, neither side is properly motivated.

Rapid time-to-market is the essential part of making anything future proof

The sell-side has low margins from what is effectively a staff augmentation model, which is not great for anybody. Similarly, the buy-side middle management is not empowered to change the defined scope of work. Going forward, the sell-side winners will be the companies that are nimble and flexible. Sell-side firms have to cannibalize their cash cows, because their cash cows are the traditional sourcing projects that are getting them stuck in a rut, while new entrants (niche players) come up with fresh thinking. Workday is a good example of this. Workday really overtook PeopleSoft, because PeopleSoft had become big, clumsy and slow. Along comes Workday with similar people, but they were leaner, more agile, more responsive. Now what's happening today, is that Workday is being undermined by new entrants, who themselves are faster and more agile and more response than Workday.

So the big guys have an inherent problem. Maybe what the large systems integrators need to do is to start up a separate legal entity. Airlines like United and Continental watched the low cost airlines take their business away. United knew that it couldn't compete since it had too big an overhead, and so they created a smaller legal entity (trading as TED) to compete. Maybe the big IT companies should think about that.

Q. Where do you think organizations ought to make investments in application management and why?

A. For a number of years now, enterprise architecture has been moving towards SOA, Services Oriented Architecture. I know that concept has been around for over a decade, but for most of that time it hasn't been do-able. Only in the last few years has it become a practical thing to do. Again there are two threads running within most IT teams. The first is supporting legacy systems, many of which are gradually being rationalized and modernized; and secondly they need to create new business solutions which are nowadays mostly based on SaaS.

As an example, with the recent split by Hewlett Packard into two companies, they needed to replicate some 2,700 applications in both of the two new legal entities. When I was at BP, I oversaw a portfolio of 2,800 applications which were mostly unique instances that were customized. Because the oil and gas marketplace is currently so depressed at the moment, BP is having to focus its attention on cost reduction for IT, and that is often interpreted as reducing the number of third-party companies they work with. When I was there, we ran a project called ADAM and we chose five third-parties to work with. Today, BP has gone down to three major preferred suppliers, and their logic is that if you give a third party more work, there will be an economy of scale and you will get a bigger discount. So firms like BP are seeking to drive let's say 10% year-on-year budget reduction by giving a smaller number of companies a larger share of the pie. Personally, I think that's the wrong strategy – they are mortgaging their future, because can you guess what is going to happen to these three companies? They will have

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to drive down costs themselves, and so their margins will be extremely low. The first thing to be sacrificed is innovation. And that is counter-intuitive to me, because innovations around agility, greater flexibility and leveraging cloud SaaS are often the quickest ways to get business results; and in the final reckoning, that's how IT can help the business grow and prosper rather than just keeping the lights on and minimizing cost.

Q. Looking at the overall application management area, what are the ways and means in which it can make the organization future proof?

A. The question presumes that you can either anticipate the future (which is extremely difficult these days) or you can adapt quickly to the unexpected. I used to be very proud of our five year IT strategic plan, but I cannot imagine any organization today having a five year anything. To my mind, if you can't implement a project within 12 months, then you will become a victim of circumstance. Rapid time-to-market is the essential part of making anything future proof and has many advantages compared to the old way of doing things.

During my career, I have overseen many big SAP implementations. In some cases it has taken us at least three years to do the implementation, then there is the adoption by the business, and from there getting to a breakeven point in a major achievement even before there are any net business benefits — that could be seven years after we first started.

If I was to say that to somebody today, they would laugh at me because it's so ridiculous. Nowadays, if you can't get business benefits within 12 months, your business sponsors will have probably moved on; the macroeconomic climate will have changed; the business will have been acquired; or may have divested some of its lines of business. So many things can change within a year or two. The one term that encapsulates all of this for me is 'clock speed' – the winners will run fast, and the losers will run slow.

Q. If you are saying future proofing equates to time-to-market, what can IT do to make that time-to-market shorter?

A. Often the answer is don't develop a custom application in-house. Conventional SDLC dogma requires that you have a rigorous specification of the business requirements; that you develop and test the code; and then you release it to the end-user community. Even with DevOps, often the length of time it takes to collect all of the businesses needs will mean that they have changed in the meantime. I love the concept of the Minimum Viable Product, followed by frequent new code releases.

As a CIO I have always strived to engage with the business in each of the staged releases, but even then, if I could go and find a SaaS or modular/ re-use solution that had 85% of the functionality required, I would always take the quick route since the business will be able to absorb and give feedback on the value of the functionality that you're immediately able to offer. You can later add 15% satellite capability without impacting that core solution to meet the total business requirements.

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Q. How do we make sure we are not creating new legacy which in future will slow us down?

A. Wherever possible using a modular solution that is componentized seems to me to represent the best answer. I am a great believer in a modular 'plug-and-play' solution. Another example from my time at General Motors was where we needed to implement our company-wide SAP system in Brazil, but the Brazilian market had a unique requirement for bills-of-lading since every new vehicle had to be shipped with a unique bill-of-lading. SAP could not handle that. We had to develop a custom instance of the core SAP application just for Brazil. If only we had an add-on app for SAP, we would have orchestrated the cluster of apps in a way which would have been a much more agile than by modifying the core SAP instance.

Q. What role do investments in application management have in the end-to-end flawless execution of business processes?

A. Well, it starts with lots of acronyms! Business Process Management (BPM) is really part of ITOM (IT Operations Management). ITOM is related to ITIL (Information Technology Infrastructure Library) and ITIL is related to ITSM (IT Service Management). In my opinion, the IT team has to be able to manage the total solution between the endpoints and the hybrid cloud, and everything else in-between. This will include a CMDB (Configuration Management Database), a service

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catalogue, configuration management, change management and a service desk. Where you are operating as a service broker of micro services in a SOA environment, you need to have a way of managing automated updates and security from cradle to grave. All of these things contribute towards the business processes becoming agile and optimized, while running more smoothly and efficiently.

In all of this, the IT function has to be able to create the unique solutions using a DevOps type of mentality, and has to blend these with SaaS or SOA type components and orchestrate the business outcome.

One of the mistakes in my career was implementing vertical IT services–by vertical, I mean the transport layer, the operating system layer, the hosting, the middleware, the applications and the graphical user interface. We used to have separate teams looking after each of the seven OSI layers. They were all experts in their own right however at the end of the day, it is the horizontal result that matters — none of these vertical components matter in isolation. To my mind, today's IT service needs to be a horizontal service and not a series of vertical silos.

Q. Have you seen that implemented anywhere, where you talk about horizontally, end-to-end orchestration of the business process?

A. At BP we called this Operating Model Version 2, which was horizontal. Operating Model Version 1 was its vertical equivalent. In an earlier role at Altria (Phillip Morris, Kraft Foods and Miller Brewing) we appointed subject matter experts who were our customers and we (the IT service provider) had to satisfy the needs of these embedded SMEs. They were the 'voice of the customer'. It was a great model since it drove us down a horizontal rather path rather than a vertical one.

Q. Currently, there is much public discourse on cognitive computing, autonomics, etc. Do you see the role for these advances in application management mainly around elimination of labor related to certain tasks or do you think that these have a role to play in delivering business outcomes?

A. I am absolutely certain that it is the second of these two criteria. Reducing IT manual labor is not particularly interesting to the executive committee of most companies. Automation is only really important if it provides you with a better business result. For example, in security terms, this may mean automated security updates in order to close-off vulnerabilities on every endpoint device before they can be exploited. If there is a known vulnerability in an operating system or an application, the vulnerability has to be repaired and remediated and the solution has to be propagated quickly, often across many thousands of users encompassing a wide diversity endpoint devices: tablets, laptops, smart phones, Android, iOS, etc.

In an oil refinery or in auto assembly lines, they use SCADA systems which utilize general purpose PCs these days — they are no longer proprietary closed systems like they used to be.

Where you can automate quickly the propagation of bug fixes, security updates or application enhancements, you're able to offer end-users a better service. It is a more secure service, a more up-to-date service and more reliable service. These are examples of the meaningful business results which automation can give you. Automation for the sake of it is not interesting to the executive committee, but it will be the business outcomes that it will drive IT automation.

A good illustration of business outcomes was when I was working for Merrill Lynch. If we got to hear of a trading vulnerability that had been discovered by another bank, my team had to implement that fix really quickly. Otherwise, if we were the only bank with that weakness, it could be exploited maliciously. It was really important for us to automate that process, otherwise, we would be lagging behind and we would be the weakest link in the chain.

Q. Does automation have role to play in enterprise IT or is it linked mainly to cognitive computing, machine learning or artificial intelligence (AI)? Does it have a role to play in enterprise IT?

A. In my view, AI holds out a bright future. Not because it eliminates manual labor, but because it does things better. In data science, AI belongs to a class of solutions called self-optimizing hill-climbing systems. This can eliminate human error in so many different ways. Sometimes where a human being has produced a bug fix, they would get certain things wrong and by making these

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mistakes, would leave the system wide open to massive vulnerabilities. Machine learning systems make far fewer mistakes, and can detect and auto-correct them. If you can embed that capability into a closed loop system, then have got a very dynamic solution that can constantly adapt to the business climate. To me, that is what information systems need to embrace in the future.

Q. What can be done in the area of service integration to makes it seamless and effective for the end consumer of the product or services either within the firm itself or the external consumer?

A. The answer that the IT profession has generally come up with is to reduce the number of component parts so that you can integrate services in a more manageable way. Our general approach to problem solving has been to reduce the dimensionality of the problem. However, adopting such an approach can seriously limit your flexibility and limit innovation, because you are then dependent on a small number of large components.

A better approach is a large number of smaller components, like a mash-up of web services. If you are a bank, for example, and want to be able to automate the mortgage application process, you will not want to rely on just one or two major monolithic applications. You may already have a credit card processing service, a credit evaluation web service and an underwriting risk management web service. By combining (orchestrating) these with a bunch of other web services, you could be able to automate the end-to-end process in a matter of days rather than months.

In future, the skill is going to be able to orchestrate a large number of smaller components and make sure that they are all working in harmony — and when a problem does occur, to understand where the problem lies and get it fixed quickly. That is not necessarily a skill that IT people have learned in the past, and instead we have become accustomed to a small number of large vendors who blamed each other. CIOs need to force their service providers to work in harmony and that's very unnatural for some large IT service providers. Each firm will have its own operating model, and it is very difficult for individual clients to dictate to them that the vendor must change their operating model to accommodate a multi-supplier arrangement. Each supplier will have hundreds of clients and so Capgemini will say my operating model is x, and IBM will say my operating model is y, and each client cannot require them to change to a common model. So when using multiple vendors, the client clearly should not outsource the management responsibility, but instead keep the oversight and coordination in-house by acting as a sort of a hypervisor. Hypervisor is commonly regarded as a technical term referring to operating systems, but it is also a human term referring to operating models (behaviors, processes, frameworks). A CIO or senior IT executive can be the human hypervisor of multiple different operating models.

As you become comfortable with complexity, the dimensionality of these problems exceeds the ability of a human brain to comprehend all of the variables. That's why you need software tools. And that is why I would prefer a vendor that came to me and told me that they have the great tool set for managing complexity. As a customer, I have had major vendors come to me and say that they want to be the prime contractor and will only consider working with other vendors as subcontractors, and will manage the eco-system for you. Then the client is abdicating responsibility. So going forwards, I don't think it there will be many prime and sub-contractor relationships, but instead there will need to be peer-to-peer relationships, requiring the client to have both the skills and the tools.

Q. Where an organization reduces its supplier base, how do they make sure that they retain access to innovation, access to testing the market and onboarding a worthy new supplier?

A. I always try to bring science to a judgment call like that. You can draw a graph with one axis being the degree of supplier complexity and the other axis representing business agility. This is almost a contradiction in terms between having a small number of vendors that are easy to manage but providing little innovation or disruptive thinking, and having a much larger number of vendors that are very difficult to manage but each of them is an innovator in their respective field. Each vendor is bringing what I call "prior art" (proven experience) to solve your specific problem, since they are niche and they are specialists. You can draw the graph that shows a sweet spot providing maximum innovation and manageable complexity. Many of my industry colleagues have usually erred on the side of simplicity. Personally, I am not a believer in that. It drives you to a small number of big relationships, which is a mistake in my view.

Q. What sorts of business impact do these vendors need to be delivering in order to earn their right to be strategic partners?

A. They need to bring niche expertise regardless of their geographical origins. It used to be you would go to an Indian company because their unit prices were lower. Since then, we have grown up and now understood

that cost arbitrage is not the most important factor. The business benefits are by orders of magnitude much bigger than any cost savings. Instead, ignore the geographical issue. Today, you should be choosing companies that bring prior art with them, and often that takes the form of a platform solution that can be quickly adapted to your company's specific needs.

If I was an insurance company and I needed to develop a new claims system, I wouldn't be going to a generalist supplier. Instead, I would go to the company that had created the claims system for AIG or for Cigna or for Aetna. I would want to work with the company that has created the world's best claims system and will be able make my claims system even better. That's what I mean by prior art.

Q. How do you get the required data agility to make the organization work, especially where data does not easily flow between systems often because different suppliers have brought their own data model?

A. This leads us to another dimension of selecting the best that I haven't really talked about so far, and that's having the best people. Once again, I believe that a small number of really good people is always far better than having a large number of average people. As CIO, I want to have a lean and small expert team. I also want my suppliers to give me their A team — their best people. I don't want a supplier to say we have 5,000 people who know about insurance claims systems. However, if you say, we will give you our five best people on your project and these people have worked on the AIG system, or on Hartford, Aetna or on Cigna, I will respond by saying that I really value that core of thought-leaders.

As CIO, one of the key direct reports is the Chief Data Officer, butit is hard to find knowledgeable smart people who understand the importance of data — these people are scarce.

Data science is probably the fastest growing field in IT, but most people misunderstand the concept of big data. It is not structured data. As a technologist, I don't care how big Aetna's database is of medical records because it is structured data and the problem of managing structured data has been solved. There is no real problem of size in structured data. The "bigness" comes with unstructured data. The definition of big data I refer to is commonly known as the four Vs: volume, variety, velocity and veracity. The fourth term veracity would also mean provenance. These are the four challenges that any data scientist or any chief data officer should be wrestling with.

Q. What are the necessary skills and attributes for someone working in IT and how do we make STEM an attractive career for young people?

A. That's a big issue especially here in the United States. The younger generation especially the Millennials in North America, don't seem to appreciate the importance of science, technology, engineering and mathematics. The subjects do not feature strongly in the education system. That is the driver behind having to recruit foreign nationals because companies want the best person from anywhere in the world for key roles and skills.

IT workers increasingly need a hybrid of business and technology skills. In the past, we would train technical people and we would ask them to go understand the business issues. I think that's gradually changing. The Millennial Generations have grown up with technology and are now becoming business experts. The concept of shadow IT used to be a problem for people in IT, but now it is an opportunity. When a business person comes to IT and says, I think I want to choose the following SaaS solution because it meets all of my needs, in the past IT people would say "No, leave it to us. Just write down your requirement and we will go and find the right solution for you." But instead people in IT should love the fact that business specialists also understand the need for technology. That is the future, and we need to embrace shadow IT.

Q. How can we use maybe mobile technology for example to drive interest in STEM that will be needed for the future success of companies in this country?

A. Youngsters have grown up with mobile, social networking and instant gratification. That gives the IT professional the opportunity to explain that they shouldn't just download an

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Capgemini met with Jim Noble in Stamford, CT.

application from the app store and accept the default settings that usually permit the app to listen to your microphone and know your location constantly. You can use these as teachable moments to say, "That application you've got on your mobile device is terrific. Did you look at the default settings? Do you know where your data is stored? Is it stored in a safe haven country?" And they will say, "Sorry? Why does that matter?" And you can use that as a teachable moment.

I strongly believe in the concept of 'Pay It Forward'. It is based on the concept that if somebody does something good for you, and you learn from them, you do not give them back something to pay them back directly, instead you 'Pay It Forward' to somebody else. So you take your new understanding and you give that to somebody else. In IT, we can 'Pay It Forward' by educating our people as part of a 'Lunch and Learn' session. A 'Lunch and Learn' on identity theft has often proven to be a very popular subject for the employees in a company. We can say, "Let me tell you how my identity was stolen and let me help you avoid that happening to you." And then, they'll use that to raise the awareness of their family members. Our job is to propagate know-how.

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