Cloud and the Manufacturing Industry: Cloud Computing Provides Opportunities to Use Data in New and Interesting Ways, While Keeping it Secure

Transcript of a BriefingsDirect podcast on cloud computing and the new business opportunities it offers.

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Dana Gardner: Hi, this is Dana Gardner, principal analyst at Interarbor Solutions, and you're listening to BriefingsDirect.

Today, we present a sponsored podcast discussion on the implications cloud computing has on companies in the manufacturing industry.. We'll look at how to best define cloud options and how specific businesses can use these new, and often times old, means to add flexible sourcing to gain new business agility. The goal is not to define cloud by what it is, but rather by what it can do, and to explore what cloud solutions can provide to manufacturing industry companies.

Here to help us uncover the specifics of cloud-enabled business outcomes is Christian Verstraete, Chief Technology Officer for Manufacturing & Distribution Industries Worldwide at Hewlett-Packard (HP). Welcome, Christian.

Christian Verstraete: Welcome, Dana.

Gardner: We're also joined by Bernd Roessler, marketing manager for Manufacturing Industries at HP. Welcome, Bernd.

Bernd Roessler: Thank you, Dana.

Gardner: And we're also joined by Mick Keyes, senior architect for Business Critical Systems at HP. Welcome to the show, Mick.

Mick Keyes: Many thanks.

Gardner: We want to look at this whole issue of cloud by first better understanding what we are talking about. The notion of how cloud is defined, of course, has been up in the air, pun intended.

Let's first go to Christian. What has made the world different about cloud issues now? Why all the fuss?

Verstraete: Well Dana, I think there is a lot of fuss, because on the one side, there are a lot of promises that seem to be coming out of the cloud and, on the other, there are a lot of requests that are actually being asked of IT professionals. One of the major ones is to reduce cost in the current situation and circumstances that we are in.

So, with that in mind, cloud with its "promises" -- and I put promises between brackets -- of drastically reducing costs is obviously appealing to a lot of people. However, there are probably as many cloud definitions as there are people who are actually doing something in the cloud and talking about the cloud.

I don't want to go into any of those. I just want to highlight what we at HP want to do, and are doing, in that particular space, because we feel the company really has a role to play in three different areas.

The first area is that even if you, as a cloud user, don't use any infrastructure or anything, that infrastructure needs to exist somewhere in the cloud. The first thing is that we provide cloud-service providers with an appropriate infrastructure to be able to provide those services that we were talking about earlier.

Number two, many of our own customers don't really know what cloud is and how to get there. So, we help our customers address their needs and help them understand how they can transform their IT to embrace cloud.

Number three is that we, ourselves, as a company, are providing some cloud services.

Gardner: The idea, I think, is "faster, better, cheaper," "Everything as a Service," but with a variety of different approaches that are specifically tuned to the enterprise.

Everything as a service

Verstraete: Absolutely. Ultimately, and you pointed it out, it's going to be "Everything as a Service." Actually, the concept of "Everything as a Service" is nothing new. It goes back to a gentleman named Joel Birnbaum, who was heading up HP Labs around 1980-1982.

He spoke about compute appliances and compute utilities. The cloud is really that compute utility. He was actually foreseeing the beginning of the 21st Century, and he was pretty close.

Gardner: Well, that's very good. Let's go to Bernd, now. Tell me some examples of what we consider to be critical success factors. How do we know, when we look to cloud enablement, that we're going to be getting something for our money or that we are going to be doing something we couldn't do before?

Roessler: I'd like to start by highlighting the fact that cloud services to consumer are distinct, different things, compared to cloud services in the enterprise. I'm representing some thoughts from an industry vertical perspective and I think we need to have a particular look at what is different in providing cloud services for enterprises.

Number one is that everybody likes to live up to the promise of saving costs by introducing cloud services to enterprises and their value chains. Nevertheless, compared to consumer services like free e-mail, the situation in enterprises is dramatically different, because we have a different cost structure, as we need not only talk about the cost of transaction.

In the enterprise space, due to legislation of the surroundings, which are critical for enterprises, we also need to think about, privacy, storage, and archiving information, because that is the context under which cloud services for enterprises live.

The second dimension, which is different, is the management of intellectual property and confidentiality in the enterprise environment. Here it is necessary that cloud services, which are designed for industry usage, are capturing data. At the moment, everybody is trying to make sure that critical enterprise information in IT is secured and stays where it should stay. That definitely imposes a critical functionality requirement to any cloud service, which might contradict the need for creating this, "everybody can access anywhere," vision of a cloud service.

Last but not least, it is important that we're able to scale those services according to the requirement of the function and the services this cloud environment should provide. This is imposing quite a few requirements on the technical infrastructure. You need to have compute power, which you can inject into the market, whenever you need it.

You need to be able to scale up very much on the dependencies, however. And, coming back to the promise of the cost savings, if you're not combining this technology infrastructure scalability with the dimension of automation, then cloud services for enterprises will not deliver the cost savings expected. These are the kinds of environments and dimensions any cloud provisioning, particularly in enterprises, need to work against.

Enterprise requirements

Gardner: Christian, it sounds like we are talking about the true enterprise requirements for doing cloud. As we're pointing out, they're different from a consumer perspective. Another

important aspect of any business is the amount of trust and verification and the ability to measure and define expected outcomes and then present some sort of a cost benefit analysis.

These providers of cloud services are in a position now where they perhaps have to gain the trust of these enterprise users, based on what they have been expecting as business as usual for IT services. Could you explain what we mean when we go to the trust issues in how a secured, mature cloud environment might unfold?

Verstraete: Absolutely, Dana. There was one point that Bernd just made that is a very important one and it's often overlooked by people. The cloud, as it exists today -- think Amazon, Google, or some of the others -- is really being built around the consumer. You consume some cloud services. You pay with your credit card.

That's a very simple example. This is the best shadow IT I have ever seen. IT departments should get absolutely red hot on that one, because now IT can be sourced completely outside of their control, outside of their environment, outside their processes, and outside their structures. With that in mind, how do you maintain Sarbanes-Oxley compliance?

How do you maintain all of the things that need to be done to ensure that enterprises remain within the boundaries of the law and remain within the boundaries of what they need to do? Cloud-service providers will have to rethink a number of things that they're doing and demonstrate to enterprises that yes, they are secure, that yes, they provide and they can avoid having anybody in the organization just tap services without anybody else's knowledge.

Let me give you a very simple example. I was talking to a customer about two months ago. One of his people had tried hard to convince him to use a cloud service -- in this particular situation, Google Docs -- to share documentation between people who were working together, because it was very secure -- he was told. Everything worked fine. Then, one of the vice presidents did a search in Google and suddenly saw a secured document from that company appearing in his searches. Oops.

There are still some trials and other things going on. I don't want to beat specifically on Google in this particular example, because the others are in the same situation. There are still a number of things that need to happen and haven't been put in place yet today to provide enterprises with all the bells and whistles they're used to in either their existing environments that they own or in the environments that they outsource.

That's where the critical element is for an adoption of the cloud in large enterprises. It has to do with the protection of intellectual property. It has to do with trust and the limitation of the risks of the person that provides them the services, and so on. It's really about that. That's core and central.

Gardner: In addition to having to make these services appealing to enterprises, based on what they have come to expect, in terms of these larger issues of trust and compliance and so forth, we also need to consider that perhaps one size doesn't fit all, and that these industries, these companies will look for some specialization or customization. They have business processes that are unique.

Let's go to Mick. Can you offer us some insight into how a specific business might look to cloud computing, not for just the most blunt services but perhaps something a bit more surgical?

Product traceability

Keyes: Sure. One of the major topical areas in this space is the area of product traceability in global supply chains. The more traditional "one step up, one step down" method, which is the norm today in addressing the tracing of any product, has its limitations in providing visibility into the product across its lifecycle. Hence, getting an accurate, single picture of the life story of a product is something the industry and the consumers have struggled with continuously.

That's part of an initiative in bringing what we call a "cloud traceability platform" to market. We at HP will be creating a number of specific services to address this area. One of the initial services we will target is in the area of product recall. We will be creating a unique product-recall service in conjunction with GS1 Canada, an international standards body.

This service will provide users with secure, real-time access to product information, which will facilitate industry efforts to ensure that recall products are fully traced and promptly removed from the supply chain.

This will enable more accurate targeting of recall products, while security enhancements will make sure that only authorized recalls are issued and only targeted retailers receive notifications. Our plan with this service is to then extend this to other sectors, such as the hospitality sector, and then consumers down the line.

Gardner: As I try to understand it better, now, we have a course in which you've got a product recall for some reason or another. You need to bring a product back or alert people of some change in the status of that product. This impacts a number of different players -- retailers, distributors, and manufacturers -- and country-by-country, it could be different organizations entirely. So you're looking at a number of different players, and a cloud approach benefits that in some way.

Keyes: Absolutely. As I mentioned, the more traditional approach has always been one step up, one step down, and each entity in the supply chain had to be connected together.

What we're offering is a centralized offering, a hub, where any of the entities in the supply chain or nodes in the supply chain -- be they manufacturers, be they transportation networks, retailers, or consumers -- can use the cloud as a mechanism from which they will be able to gain information on whether our product is recalled or not.

Gardner: And, this has a very dramatic economic impact. If you can elevate this process to the cloud, more players can be quickly brought up to speed, and there's more opportunity to control the issue at hand. That can save boatloads of money, I would think.

Consumer confidence

Keyes: Absolutely, and it's been a very topical area in the last few years with a large number of recalls across the world, which hit industry fairly heavily. But also, from a consumer point of view or visibility into where the food comes from, this can be extended to other product areas. It improves consumer confidence in products that they purchase.

Gardner: I want to go back to Christian. Did you have an example as well about something in the automotive industry that would benefit from a cloud perspective?

Verstraete: Yes. It's something that already exists in an early cloud format, if I can put it that way, but that will actually evolve over time. It's called IMDS. It's basically a database or a central set of information that is providing most of the automotive manufacturers today information on their critical components and particularly on the substances that are comprised within the critical components.

They can get the appropriate reports to be in line with the legislation around sustainability and around hazardous materials in a number of those areas. What we're doing is tying together the suppliers of parts who know what goes into the parts and the automotive OEM's who will use those parts and will combine those parts with other parts.

They can figure out what the total hazardous materials are and what the total critical substances are in this particular car. What we are doing is tying together dispersed sources of information to provide consistent answers to the users.

Gardner: That's very interesting. I really like these business examples that show the ability to pull in multiple partners, which has always been a bit of a difficulty when only one partner's application might be at use. Then, it became a middleware immigration problem. Now, we're talking about simply a coordination process problem. Is that fair?

Verstraete: That's absolutely fair, and there's another element in there, Dana, which is critical and important to understand. It's one of the reasons GS1 Canada and HP decided to go to the cloud. In a cloud environment, you can keep your data distributed.

There are all sorts of regulations today that some data needs to remain in particular countries. But, what you want to do, when you start pulling all of that together is you want the countries being able to view a complete set of data. You want to get things at your fingertips, even if the source of that data may rely in multiple spaces and from multiple sources. That's an added value of the cloud in this type of a problem.

Gardner: Very interesting. Just to go back to consumers for a moment, they're becoming accustomed to using so-called Web 2.0 technologies to be able to communicate and create communities on the fly, harness different viewpoints within ad hoc discussion, and then instantiate that into an application set of some kind. Now, we can take this into the business, but in a way with which enterprises are comfortable.

Let's go to Bernd. Tell me about some examples that you've been working with..

Changing behavior

Roessler: A couple of examples might illustrate that. We've been talking about the requirements of trust, but let me discuss a couple of examples where we have been finding out that some dimensions of cloud are changing business behavior of companies. Let me start with the famous trust element.

In a lot of cases, we're finding constellations, where a market or a particular problem cannot be resolved, because the market participants are in a lock box. Very often, a trustee can come in, destroy that lockbox, and enable new agility and new services towards the market participants. I'll give you a couple of examples.

Point one could be incorporated and accelerated collaboration between automotive OEM's and their dealerships. Nowadays, it's still "who owns what data," particularly about the driver. The trustee can come in and provide a set of cloud services, thus enabling the automotive OEM to have a much better view of the real end user situation and demands, but without jeopardizing the requirements of the dealerships to keep the concrete individual data in their hand, because it's their customers.

A trustee can offer cloud services to both of these market participants and thus transform the overall quality of information serving the joint intent -- selling more cars and providing better services towards the automotive drivers.

The other example is this element of the print services. With today's digital printing technology, you have, in combination with cloud services of information generation and production, the possibility to build magazines and print them on demand in very niche areas..

One could think about producing a magazine, which is aimed for people who are interested in analog players the hi-fi market. It's not a very big crowd of people. So, with the cloud service,

plus digital printing technology, you have the possibility to create a customized, very targeted type of magazine for those people. This gives the publishers the possibility to address niche markets, which is very often called "addressing the long tail" of publication users at the end.

Gardner: Christian, on this whole point of sharing and trust, we've heard quite a bit about "co-opetition" in recent years, where the competitors can cooperate at some level. It's easier said than done. Is there something about what we can do in the cloud that makes that level of cooperation even among competitors a bit more viable?

Verstraete: Yes, because in the example I was giving, where the data basically resides in multiple places, the data resides and remains with you, being one of the players, and you can identify at the data-item level what information you will share with whom and what access you will give to whom.

You can have within the same environment a series of data that you're prepared to share with your coopetitor, and some other data you definitely want to keep for you. That's not an issue. That's way easier than when the data has to reside in a central location, is outside of your control, and anything can happen.

Out of your control

That data that you don't want to share with your coopetitor you may have to share with somebody else in your supply chain. So, the data can get out of your control in the traditional approach. That's an example where the cloud can really make a number of things easier.

The second related element is that, in the traditional collaboration approach, somebody needs to set up the environment in which people are going to collaborate. Typically, that's the OEM in the supply chain, but that means that somebody needs to go and invest for that to happen.

Here, there are no needs for predefined investment upfront, or at least for very little investment upfront. You can use the cloud and the cloud environment to basically provide that. It facilitates the entry point in starting cross-enterprise collaboration.

Gardner: Now, Mick, this collaboration can take place not only among companies, but between the public and private sector, particularly in this food industry or recall tracking application approach that you mentioned. Tell me more about what might be offering us benefits in the future between public and private cooperation.

Keyes: Certainly. We see quite an extension into what we're doing here from our initial services. We see how business and industry, especially in the food or pharma area, will buy into this concept, but we want to extend it directly to the general consumer in some way.

It's not just in the food area. We also see it expanding into areas such as healthcare and the whole pharmaceutical area as well. We're looking at the whole idea of how you profile people in the cloud itself. We're looking at how next generation devices, edge of the network devices as well, will also feed information from anywhere in the world into the profile that you may have in the cloud itself.

We're taking data from many disparate types of sources -- be it the food you actually eat, be it your health environment, be it your life cycle -- and be able to come with up cloud based offerings to offer a variety of different services to consumers. It's a real extension to what industry is doing and to how the consumers live their life.

Gardner: So, it's a sort of common denominator between the private sector, the governments, or public sector, and then also the consumers.

Value-add services

Keyes: Absolutely. For example, in the whole area of recall, we're looking at value-add services that we will offer to regulatory bodies, other industry groups, and governments, so they can have a visibility into what's happening in real-time. This is something that's been missing in the industry up to today.

Gardner: Now, Mick, as an architect, what is it about HP's approach that fosters more of this über perspective on business processes?

Keyes: Our traditional strengths are in certain key areas, particularly in the whole area of transaction processing and next-generation transaction processing. Also, we've been very strong in providing more traditional services to stock exchanges, to telcos, and to a variety of different environments across manufacturing and healthcare.

We're taking the concepts of derived features -- the reliability, the availability, and the service availability of environments that we've implemented in the past. We're looking at the same blueprints of concepts to bring into consideration from defining the actual architectural blueprint of what we offer.

The most important thing here also is scale. So, from our own Business Critical Systems (BCS) concept within HP, offering scalability and environments that will host cloud type environments, we'll be able to offer that to industry and consumers.

Gardner: Christian, as we mentioned earlier, we need to make these processes and benefits of going to the cloud enterprise-ready and mission-critical. Perhaps you could fill us in a little bit on how HP has used this services enablement blocking and tackling, if you will, around SOA governance, the ability to exercise a variety of hosting options, and, of course, management software.

Verstraete: Well, let me come back to what I pointed out earlier. We're basically working on three fronts. Mick alluded to the first one, which is working with service providers to make sure that they have data centers that are really optimized from a performance point of view and that are very much capable of ramping up and ramping down services extremely fast.

For example, not long ago, we came out with a new product that we call Matrix that allows a very quick reprogramming of blade servers and storage, so that you can start adapting your environment as and when your needs require. You can provide the uptime and the service levels that consumers and customers expect from you.

That's one area, working with the provider himself, to help him develop an extremely robust, high-performance environment that can really address the changing demands that are coming up to him.

Appropriate security

The second element is looking at it from the other end. We talked about trust earlier -- how we can reassure the enterprise customer that the service that he will use in the cloud has an appropriate level of security and performance, has service level agreements, and so on.

Here we're building on our experience and expertise in our management software in general, and particularly in our own experience with offering these management tools on a software-as-a-service (SaaS) basis to help them using those tools, to understand and assess what level “pipe” they have in the cloud, and how good that one is at any given moment in time.

Gardner: You know what's really interesting to me about this conversation is that many times nowadays we hear cloud discussed strictly in terms of return on investment (ROI), reduced costs, or the savings from getting on-premise systems off of the company's budget and on to a per monthly payment schedule of some sort. But, what we're talking about is being able to do things that couldn't be done before across these businesses that are unique and specific to these industries.

I wonder if we have some sort of a metric of success from some of the examples that we’ve talked about so far. We’ve talked about automotive and food and retail recalls. What do these new and interesting processes actually get for us as a business?

Keyes: One example I would like to highlight here especially is in the traceability area around product. If you look at some of the more difficult supply chains, food is one of the more difficult supply chains out there. There can be anywhere up to 20 different nodes or elements from "farm to fork," as they like to say in the industry. Industry or entities near the start of the supply chain would like to get more information on how the product might be used.

In the more traditional way of what we like to call the "one step up, one step down," when a product is bought by a consumer, the actual entity of the grower -- be it the farmer, the producer, or whatever -- may not have information to how that product is actually used.

Now, with this mechanism, this cloud-based service, because each entity is subscribing to the whole cloud hub -- or exchange, as we like to call it -- we're able to offer a lot more visibility to every element in the supply chain about the different stages of how the product is actually used. That becomes something that can be turned into quite a competitive nature also.

Gardner: Does, anyone else out there have some metrics of success of how businesses have already been able to use this to their advantage?

Cost saving potential

Roessler: I'd like to build on some of the thoughts we were discussing earlier. One of the dimensions clearly has cost-saving potential. The cloud is pushing a critical enabling technology into the IT departments, and whether they're sourcing the cloud from outside or they are building cloud services within the enterprise doesn't matter. In order to be successful and capitalize on the technology, you need to automate a significant portion of your services as an IT company. That will then ultimately deliver the cost savings everybody is waiting for.

A lot of IT departments are still spending the majority of their budgets on operations, and so cloud is pushing even further the need for automation. It subsequently will be measured and judged on the deliverables towards cost savings.

Verstraete: If you'll allow me to give out one additional example, Bernd talked a little bit earlier about this whole concept of MagCloud, and he was pointing out the long tail of magazine printing. Fundamentally, the other element in MagCloud is that it becomes a print on demand, which means you only print the magazine when someone actually buys it.

I don't know whether you realize that 60 percent of the magazines that are printed in the US are not sold to customers and are going back for recycling. It's fascinating when you think about it.

By using cloud services and by changing the approach that is provided to the customer, at the same time you do a very good thing from an environmental perspective. You suddenly start seeing that cloud is adding value in different ways, depending on how you use it. As you said earlier, it allows you to do things that you could not do before, and that's an important point.

Gardner: So, this visibility across multiple partners, including the end consumer, could reduce waste significantly, which of course reduces energy use and the carbon footprint. So, we should think about overall resource efficiency as an aspect of this as well.

Verstraete: Absolutely.

Gardner: Now, for those listeners who are getting some ideas about how they could use cloud and how it could enhance their business specifically, how does one get started? How does one start on this journey, where these cost reductions are in the offing, as well as efficiencies and these innovative new business processes?

Cloud over-hyped

Verstraete: I would suggest they first ask themselves one question, and you alluded to it earlier, Dana. Cloud is very much over hyped. So if we all think about the Gartner Hype Curve, what's going to happen is we're going to go through a trough of disillusionment?

Companies that are able at this point in time to invest in cloud are companies that understand that we're going through that disillusion. We will start hearing bad noise and bad news about cloud. Despite that they continue investing and continue learning where and how the cloud could actually serve in their environment. If they're not, it's probably not a good time to invest right now. I want to say that first.

The second element is to gain a good understanding of what the cloud is and then really start thinking about where the cloud could really add value to their enterprise. One of the things that we announced last week is a workshop that helps them to do that – The HP Cloud Discovery Workshop -- that involves sitting down with our customers and working with them, trying to first explain cloud to them, having them gain a good understanding of what a cloud really is, and then looking with them at where it can really start adding value to them.

Once they've done that, they can then start building a roadmap of how they will start experimenting with the cloud, how they will learn from implementing the cloud. They can then move and grow their capabilities in that space, as they grow those new services, as they grow those new capabilities, as they build a trust that we talked about earlier.

Gardner: Does anyone else have some thoughts on how to get started?

Roessler: I'd like to build on what Christian was saying. I think that we are, particularly in the enterprise space, seeing that a lot of companies that are at the very beginning of the learning curve. I think it's a joint requirement to work on that learning.

What we're offering to our clients is to capitalize on some of the research, some of the findings, and also some of our own insights, because we shouldn't forget that HP is not only building the computer, we're also in the consumer environment. So we're in the unique position to capitalize on what we would call the cloud to the business, as well as the cloud for consumer environments, and we are inviting our clients to basically capitalize on that.

Gardner: We've been discussing how the cloud can help uncover new technology-enabled business opportunities. The cloud is more than just a blunt instrument that cuts cost for consumer services, but increasingly is now being used in the enterprise, and we expect that to pick up over the coming years.

Helping us to understand these issues we've been joined by Christian Verstraete. He is the Chief Technology Officer for Manufacturing and Distribution Industries Worldwide at HP. You've been joining us from Brussels, is that right Christian?

Verstraete: Absolutely.

Gardner: Very good. I appreciate your input.

Verstraete: You're welcome.

Gardner: We've also been joined by Bernd Roessler, marketing manager for Manufacturing Industries at HP. Where are you joining us from today, Bernd?

Roessler: Frankfurt, Germany.

Gardner: Very good, I appreciate your input as well. Then lastly, we've been joined by Mick Keyes, senior architect for Business Critical Systems at HP, and I believe you're in Dublin today, is that right Mick?

Keyes: Yes indeed. I'm here from sunny Dublin for a change.

Gardner: Well, thanks again. This is Dana Gardner, principal analyst at Interarbor Solutions. You've been listening to a sponsored BriefingsDirect podcast. Thanks for listening and come back next time.

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