

# Cloud Computing by Industry: Novel Ways to Collaborate Via Extended Business Processes

*Transcript of a sponsored BriefingsDirect podcast examining how cloud computing methods promote innovative sharing and collaboration for industry-specific process efficiencies.*

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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 how to make the most of [cloud computing](#) for innovative solving of industry-level problems. As enterprises seek to exploit cloud computing, business leaders are focused on new productivity benefits. Yet, the IT folks need to focus on the technology in order to propel those business solutions forward.



As enterprises confront cloud computing, they want to know what's going to enable new and potentially revolutionary business outcomes. How will [business process](#) innovation -- necessitated by the [reset economy](#) -- gain from using cloud-based services, models, and solutions?

It's as if the past benefits of [Moore's Law](#), of leveraging the ongoing density of circuits to improve performance while also cutting costs, has now evolved to a cloud level, trying to (in the context of business problems) do more for far less.

Early examples of applying cloud to industry challenges, such as the recent [GS1 Canada Food Recall Initiative](#), show that [doing things in new ways](#) can have huge payoffs.

We'll learn here about the [HP Cloud Product Recall Platform](#) that provides the underlying infrastructure for the GS1 Canada [food recall solution](#), and we will dig deeper into what cloud computing means for companies in the manufacturing and distribution industries and the "new era" of Moore's Law.

Here to help explain the benefits of cloud computing and vertical business transformation, we welcome [Mick Keyes](#), senior architect in the HP Chief Technology Office. Welcome, Mick.

**Mick Keyes:** Thank you, very much.

**Gardner:** We are also joined by [Rebecca Lawson](#), director of Worldwide Cloud Marketing at HP. Hello, Rebecca.

**Rebecca Lawson:** Hello.

**Gardner:** And, we're also joined by Chris Coughlan, director of HP's [Track and Trace](#) Cloud Competency Center. Welcome to the show, Chris.

**Chris Coughlan:** Thanks, very much.

**Gardner:** I'd like to start with Rebecca, if I could. Tell us a little bit about the cloud vision, as it is understood at HP. Where does this fit in, in terms of the business, the platform, and the tension between the technology and the business outcomes?

### *Overused term*

**Lawson:** Sure, I'm happy to. Everyone knows that "cloud" is a word that tends to get hugely overused. Instead of talking specifically about cloud, at HP we try to think about what kinds of problems our customers are trying to solve, and what are some new technologies that are here now, or that are coming down the pike, to help them solve problems that currently can't be solved with traditional business processing approaches.



Rather than the cloud being about just reducing costs, by moving workloads to somebody else's [virtual machine](#), we take a customer point of view -- in this case, manufacturing -- to say, "What are the problems that manufacturers have that can't be solved by traditional [supply chain](#) or business processing the way that we know it today, with all the implicated integrations and such?"

That's where we're coming from, when we look at cloud services, finding new ways to solve problems. Most of those problems have to do with vast amounts of data that are traditionally very hard to access by the kinds of application architectures that we have seen over the last 20 years.

**Gardner:** So, we're talking about a managed exposure of information, knowledge, and things that people need to take proper actions on. I've also heard HP refer to what they are doing and how this works as an "ecosystem." Could you explain what you mean by that?

**Lawson:** As we move forward, we see that, different vertical markets -- for example, manufacturing or pharmaceuticals -- will start to have ecosystems evolve around them. These ecosystems will be a place or a dynamic that has technology-enabled services, cloud services that

are accessible and sharable and help the collaboration and sharing across different constituents in that vertical market.

We think that, just as [social networks](#) have helped us all connect on a personal level with friends from the past and such, vertical ecosystems will serve business interests across large bodies of companies, organizations, or constituents, so that they can start to share, collaborate, and solve different kinds of issues that are germane to that industry.

A great example of that is what we're doing with the manufacturing industry around our [collaboration with GS1](#), where we are solving problems related to traceability and recall.

**Gardner:** So, for these members within the ecosystem, their systems alone cannot accomplish what having a third party or cloud-based platform can accomplish in terms of cooperation, collaboration, coordinated and managed, and even governed business processes.

**Lawson:** That's right. In fact, I'll throw it over to Mick to talk about how this is really different and really how it serves the greater purpose of the manufacturing community. Mick?

### *Multiple entities*

**Keyes:** A good example is the manufacturing industry, and indeed the whole linear type supply chain that is in use. If you look at [supply chains](#), food is a good example. It's one of the more complicated ones, actually. You can have anywhere up to 15-20 different entities involved in a supply chain.



In reality, you've got a farmer out there growing some food. When he harvests that food, he's got to move it to different manufacturers, processors, wholesalers, transportation, and to retail, before it finally gets to the actual consumer itself.

There is a lot of data being gathered at each stage of that supply chain.

In the traditional way we looked at how that supply chain has traceability, they would have the, infamous -- I would call it -- "one step up, one step down" exchange of data, which meant really that each entity in the supply chain exchanged information with the next one in line.

That's fine, but it's costly. Also, it doesn't allow for good visibility into the total supply chain, which is what the end goal actually is.

What we are saying to industry at the moment -- and this is our thesis here that we are actually developing -- is that, HP, with a cloud platform, will provide the hub, where people can either send data or allow us to access data. What a cloud will do is aggregate different piece of information to provide value to all elements of the supply chain to give greater visibility into the supply itself.

Food is one example, but you've got lots of other examples in different industries -- the pharmaceutical industry, of course. You've also got the aeronautical industry and the aerospace industry. It's any supply chain that's out there, Dana.

**Gardner:** Mick, you mentioned this hub and this platform. Is this just a blank canvas that these vertical industries can then come to and apply their needs or is there a helping hand, in addition to the strict technological fabric, that can apply some level of expertise and understanding into these verticals?

**Keyes:** If you look at the way we're defining the whole ecosystem, as Rebecca referred to around cloud computing, we have the cloud-optimized infrastructure, which HP has got a great pedigree in. Then, we're looking, from a platform point of view, at the next level. From this, we'll launch the different specific services.



In that platform, for example, we've got the components to cover data, analytics, software management, security, industry-specific type information, and developer type offerings as well. So, depending on what type of industry you're in, we're looking at this platform as being almost a repeatable type of offering, and you can start to lay out individual or specific industry services around this.

**Gardner:** The reason I asked is that there are a number of prominent cloud providers nowadays who do seem to provide mostly a blank canvas. It's very powerful. The cost benefits are there. It gives developers and architects something new to pursue, but there is not much in addition to the solution level there.

### *A little bit more*

**Keyes:** When you offer or develop specific services and such for industry, you need a little bit more than being able to look at it from a technology point of view. Industry knowledge, we have found, is key, but also, when we talk to the businesses and each element of a supply chain -- and food is a good example, because it's global -- there are different cultural influences involved, such as the whole area of understanding governance and data, where it can and cannot be stored.

Technology is obviously a very important part of it, but how we look at producing services and who can consume the services is equally important. Also, we see this type of initiative as stimulating a lot of new innovation. When we use our platform to create certain pockets of data, for use of a better word, we are looking at how we can mashup different type of services.

Some companies will come with a good idea. There are other partners, excellent partners, who are developing very specific and good applications. We will use this hub and our business

knowledge, as well, to look at the creation of new types of services and the mashup of different services.

It allows us also to talk to the business people in different parts of the supply chain and different industries to look at very fast, creative ways of offering new services for their industry.

**Gardner:** Chris Coughlan, tell us a little bit about your competency center, how you started, and perhaps illustrate with an example how this technological knowledge and appreciation of the business issues come together?

**Coughlan:** As follow-on from what Mick said, we have [infrastructure as a service \(IaaS\)](#), we have [platform as a service \(PaaS\)](#), and we have [software as a service \(SaaS\)](#). And, in the industry we're told was that there was going to be everything as a service. But really nobody started defining what you meant beyond SaaS.

There were a lot of health scares and food scares over the last year or so. We looked at that and said. "This is a very good opportunity to actually develop everything as a service."

We also came to the conclusion, which is very important, that there are two aspects of that. There has to be collaboration along all the various company supply chains, particularly if you want to recall something, or if you want to do track and trace. As well as that, there has to be standardization in what you are doing. So, that led to our relationship with GS1 and the development of the recall system.

**Gardner:** I spoke in my setup about both lowering cost and enabling new levels of productivity and innovation. Have you found that to be the case? Are you able to do both of those?

### ***Chain of islands***

**Coughlan:** Absolutely. If you think about it, the current recall systems in the food industry -- and Mick talked them -- target from "farm to fork", so to speak. Look at all the agencies. There's manufacturing, suppliers, retailers, and whatever. A piece of food can be caught anywhere within that supply chain, and each company and each unit in that supply chain is really behaving as an island in itself.

They might have their own systems, but then those systems are not linked. If there's a problem, you have to go from automated systems to manual systems, whatever. What we've done is we have linked all those systems up. We have agreed on a standard template from the GS1. This is the information that all those agents along the supply chain will share with each other, so that food can be recalled very quickly and very effectively.

If that's done, you can see that from the health and safety issue. You can see it from a contamination issue. You can see it from getting items off shelves and preventing items from being shipped. This can happen quite fast, as opposed to the system we have today.

**Gardner:** This is a payback that seems to have a very positive impact across that ecosystem, for the consumers, the suppliers, the creators, and then the brands, if they are involved.

**Coughlan:** Absolutely. First of all, as a consumer, it gives you a lot more confidence that the health and safety issues are being dealt with, because, in some cases, this is a life and death situation. The sooner you solve the problem, the sooner everybody knows about it. You have a better opportunity of potentially saving lives.

As well as that, you're looking at brand protection and you're also looking at removing from the supply chain things that could have further knock-on effects as well.

**Keys:** Just to interject there. Those are very good points that Chris is making. We see a big appetite from different people in supply chains to get involved in this type of mechanism, because they look at it from a brand or profit center point of view. As a company, you'll be able to get greater visibility into your process or into your brand efforts right through the consumer.

In the older way supply chains worked, as Chris mentioned, it was linear -- one step up, one step down. The people at the lower end of the supply chain, for use of a better word, often weren't able to find out how the products were being used by consumers.

We have SaaS now, not just to any individual entity in the supply chain, but anybody who subscribes to our hub. We can aggregate all the information, and we're able to give them back very valuable information on how their product is used further up the supply chain. So we really look at it from a positive view also, about how this is creating benefits from a business point of view.

**Gardner:** So, a critical business driver, of course, is the public-safety issue. But, in putting into place this template of cloud process, we perhaps gain a [business intelligence \(BI\)](#) value over time with greater visibility across these different variables in the supply chain itself.

### *Addressing food safety*

**Keys:** Absolutely. There are quite a lot of activities you see around the world at the moment around greater focus on food safety. In the U.S., for example, [HR 2749](#), a bill that's gone to Congress, is really excellent in how it looks to address the whole area of food safety.

If you look at that, it's leaning towards the concept of greater integration in supply chains. Regulatory bodies, healthcare bodies, and sectors like that will very quickly be able to address any public safety issues that happen.

We're also looking at how you integrate this into the whole social-networking arena, because that's information and data out there. People are looking to consume information, or get involved in information sharing to a certain degree. We see that as a cool component also that we can perhaps do some BI around and be able to offer information to industry, consumers, and the regulatory bodies fairly quickly.

**Coughlan:** The point there is that cloud is enabling a convergence between enterprises. It's enabling enterprise collaboration, first of all, and then it's going one step further, where it's enabling the convergence of that enterprise collaboration with [Web 2.0](#).

You can overlay a whole pile of things -- [carbon footprints](#), dietary information, and ethical food. Not only is it going to be in the food area, as we said. It's going to be along every manufacturing supply chain -- pharmaceuticals, the motor industry, or whatever.

**Gardner:** Rebecca, do you have something you want to offer?

**Lawson:** The key to this is that this technology is not causing the manufacturers to do a lot of work. For example, if I am a peanut packaging person, I take peanuts from lots of different growers and I package them up. I send some to the peanut butter companies and some to the candy manufacturing companies or whatever.

I already have data in house about what I am doing. All I have to do to participate in this traceability example or a recall example is once a day cut a report, stream the data up into the cloud, and I am done.

It's not a lot of effort on my part to participate in the benefits of being in that traceability and recall ecosystem, because I and all the other people along that supply chain are all contributing the relevant data that we already have. That's going to serve a greater whole, and we can all tap into that data as well.

### ***Viewing the flow***

So, for example, maybe there is a peanut outbreak, and I, as the peanut packaging person, can quickly go and kind of see what the flow was across the different participants of growers, retailers, consumers, and all that. The cloud technology allows us to do that, and that's why we designed it this way.

The platform that HP created in this whole ecosystem is geared towards harnessing data and information that's pretty much already there and being able to access it for key questions, which would have been nearly impossible to answer, say five years ago, when the technologies were just not around to do that.

It's a win-win-win for individual companies, which can now reduce their insurance exposure, because they've got their processes covered. They have the data. It's already shared. So, it's a major step forward for manufacturing. We think this kind of a model is not just for manufacturing. This just happens to be one good use case that we can all relate to as consumers, because everybody is afraid of a Salmonella outbreak. It affects all lives. But, it's applicable to other industries as well.

**Gardner:** Of course, a recent example would be the flu outbreak, as well. So, there are lots of different ways in which a common currency of shared data and information can be very critical and important.

I also want to look at the importance of that common currency, which, in this case, is standardized service calls and [application programming interfaces \(APIs\)](#), and what we have come to be familiar with as Web services is now enabling this cloud synergy across these ecosystems.

I wonder if anyone would like to take a stab at my premise that, in the past, we have looked for productivity from increased cycles in the silicon and on the hardware and in IT itself. But, is there a new possibility for a higher level of Moore's Law, so to speak, in applying these cloud approaches to productivity? Does anyone share my enthusiasm for that?

**Lawson:** Absolutely. In fact, I could care less how powerful a server is. What I care about are the problems that I am trying to solve. If I'm in the environmental world, if I'm government, or if I'm a financial services organization, I want to be able to creatively think about how I serve my customers.

These new technologies are allowing HP's customers to solve problems much differently than they did before, using a wider expanse of currency, as you said, which is information. Information is the currency of our era.

### ***Structured vs, unstructured***

One of the big shifts going on is that information in the past 5, 10, or 20 years has been largely held in very structured databases. That's a really good thing for certain kinds of data, but there is other data now that's just streaming into the Internet, streaming into the cloud, which is held in a more unstructured fashion.

We can now deal with that data. We can now run search and query across semistructured or unstructured data and get to some interesting results really quickly, as opposed to more traditional ways of holding certain kinds of data in a relational database. We don't think that it's going away. We just see that there is a whole new currency coming in through new ways to access information.

**Coughlan:** I'm a great believer in applying Moore's Law to a lot of things beyond technology -- to society, to productivity, as you said, and whatever. It's the underlying technology that originally defines Moore's Law, which actually then drives the productivity, the change in society, etc.

But, you've heard of another law called [Metcalf's Law](#), where he talks about the power of the network. We are bringing in the power of collaboration. What you have then are two of these nonlinear laws, which are instituting change, reducing price, doubling capacity, etc. You've even got a reinforcing thing there, which might even put Moore's Law even faster than Moore predicted himself.

**Gardner:** A part of this has to be, of course, cooperation and trust. What is it about the platform for manufacturing that HP has developed that enables that trust and that places this hub, this third-party, in a position where all the members of the ecosystem feel that they are protected?

**Coughlan:** This is one of the reasons that we partnered with GS1 in this whole space. You're right, Dana. It would be something that industry wants to know immediately. Why would we trust an IT provider, for example, to be the trusted advisor to integrate all the different elements of the supply chain?

We're pretty much aware of that. In our discussions with GS1, the international standards body, is trusted by industry. This is their great strength. They are neutral. They are in 110 different countries. They have done a lot of work about getting uniform standards about how different systems can integrate, especially in this whole area of supply chain management.

We look to GS1 as the trusted advisor out there, with industry, with governments, around safety, around standards, and on traceability. They're not a solution provider, but they will go to best in class with their ideas.

They have asked the industry for ideas. They have gone to the industry and explained the process, for example, of how recall, as an example, should work and how traceability should work. So, we feel that to partner with somebody like GS1 is key to getting trust in the industry to apply these types of systems.

**Gardner:** Do you expect to see additional partnerships, and should standards bodies be thinking about moving towards partners in the cloud, so that they can extend their role as a trusted advisor, as a neutral third-party, but be able to execute on that now at a higher abstraction?

## ***Win-win situation***

**Keys:** Absolutely. This is a win-win for everybody here. There are lots of really good partners out there who have, for example, point solutions that are in industry at the moment. We feel there are a lot of benefits to these partners through using GS1 standards.

Let's say that most of them do at the moment and they are all compliant, but they can work with our traceability hubs and to try and see whether they can help exchange information. In return, we'll be able to supply information and publish information through their systems back to industry as well.

GS1 is important in this also in getting together the industry, not just the actual manufacturers or the retailers, but also the technology people in the industry, so there will be uniform standards. We all know from developing traditional systems and tightly coupled systems in manufacturing and the supply chain that you need an easier matter of collaboration. GS1 has done an excellent job in the industry defining what these standards should look like.

**Gardner:** I know we've been focused on manufacturing, but not to go too far off the beaten track, there's also this need for greater cooperation between public and private sectors across regulatory issues. Have we seen anything moving along those lines, a trusted partnership between a manufacturing platform like HP has provided, where some sort of a public agency might then reach out to these private ecosystems?

**Keys:** If you don't want to dwell on the food area, often what you find is that governments bring out laws and regulations, and they say industry must apply these laws. Often, you get a bit of a standoff, where industry would immediately say, "Okay. This is government telling us what to do, etc."

In our journey of what we've been trying to do around this food industry, a lot of time we talk directly to industries themselves. Industry now also sees what the issues are and they agree with what the governments and the regulatory bodies are trying to do.

Industry is now looking at this type of model to take a preemptive step and to show that they are also active in the whole area of food safety. It's in their interests to do it, but now I think they have a mechanism, which industry, government, and regulatory bodies can actually use.

For example, if you look at the recall project that we've been involved in, we're taking data and accessing data in industry and in retailers also, but we're looking at a service that we can publish for industry. We call it visibility type services, where, at a glance, they can look at where all elements of the recall might be and what industries are actually being affected.

We're very keen to share services or offer services to different regulatory bodies, be it government, or be it directly with consumers, consumer bodies as well, we have been pretty active in discussing this with.

**Gardner:** Thank you, Mick. Chris, do you have any insights as well in terms of this public-private device?

### *Variety of clouds*

**Coughlan:** Mick has said most of it there and Rebecca spoke earlier on about the ecosystem. As things begin to develop, you will be able to see public clouds, private clouds, and hybrid clouds. Then, you'll have a cloud portal accessing those under various circumstances, to solve various problems, or to get various pieces of information.

I see third-party point solutions feeding into those clouds. That's one of the areas that we offer -- third-party solutions -- be it in the food industry or other industries. They feed into our cloud, and that information can be either private information or collaborative information, where they define where they are going to do the collaboration, or it could be public information.

So, it would mean the private cloud, where some of the information could go into the public cloud, and other information could be a hybrid type of cloud.

**Gardner:** Rebecca, it seems like we could go on for hours about all these wonderful use-case scenarios and potential innovation improvements on process and the crossing of divides. But, the ecosystem is not just in the supply chain.

It also needs, I suppose, to be pulled together in terms of the cloud infrastructure, and the players that need to come together in order to enable these higher level business benefits. It strikes me that there are not that many companies that can be in a position of pulling together the ecosystem on the delivery side of these services.

**Lawson:** That's true, and what's different about what we are doing is we're taking a top-down approach. Right now, a lot of the industry is talking about cloud, and a lot of folks are focused on things like IaaS, [virtual machines](#) as a service, and things like that.

But you can switch it around and say, "How can we apply technology in a new way and build out the platform to support the services that industries need?" Then, for those services you build out the right kind of infrastructure and scale out an infrastructure basis on which all of that can run very smoothly.

## *Working backward*

Now, you have a really good organizing principle to say, "If we're going to solve this problem of traceability, food track and trace, and recall, how are we going to solve that problem? Everything really drives from there, as opposed to saying, "What's the cheapest platform on which we can run some kind of food traceability?" That's just coming at it backward.

In fact, a good analogy to what we are doing with these vertical ecosystems is a well-known use case around [Salesforce.com](https://www.salesforce.com) and the [Force.com](https://www.force.com) platform that generated around it.

Most folks realize that salesforce.com started with a sales-force automation product. Then, it broadened into a [customer relationship management \(CRM\)](#) product, and then, before you knew it, they had a platform on which they built the community of service or application providers, their [App Exchange](#). That community is enabled by their underlying platform. That community serves a horizontal function for sales and marketing oriented or adjacent types of services.

If you pull that analogy out into an industry like manufacturing, transportation, or financial services, it's the same sort of thing. You want that platform of commonality, so different contingents can come and leverage the adjacencies to whatever it is that they are doing.

We really see that this ecosystem approach is the way to think about it, and vertical is the way to think about it, although, obviously, different verticals will blend together. We're working on similar projects in the transportation arena, where manufacturing can cross over quite quickly into public transportation and add lots of new development. So we are pretty excited about all these new opportunities.

**Gardner:** So, we actually can start thinking about pulling together ecosystems of ecosystems?

**Keyes:** Absolutely. We look at what we're doing at the moment around food and how that might affect the whole healthcare area as well. There are a lot of new innovations coming out in the biomedical area as well, of how we can expand things like food, pharmaceutical, or drugs to the whole health system. As you said, Dana, we see that as a very important area of collaboration between different ecosystems.

**Lawson:** One more point is that the ecosystem implies that it's not just about the technology. It's about the people. So, different aspects of the ecosystem are going to be human. They may be machine. They may be bits of code. There are conditions and tons of events. The ecosystem is a more holistic approach, in which you have the infrastructure, development and runtime environments, and technology-enabled services.

**Gardner:** If I'm a member of an ecosystem -- be it in the manufacturing, vertical, health, food recall, regulatory, or public sector -- and these concepts resonate with me, how do I get started?

If I'm in a standards body of some sort, where do I go to say, "What's the partnership potential for me?"

**Lawson:** The first thing you can do is call HP and take a look at what we have done in our Galway Center of Expertise around traceability -- track and trace -- and we would be happy to show you that. You can take a look under the covers and see how applicable it is to your situation.

**Gardner:** Very good. We've been taking a look at how the new productivity levels can be exploited vis-à-vis cloud computing -- not just at the technological level, but at the process level of finding partnerships and standards and approaches that pull together ecosystems of business, potentially across business and the public sector.

Helping us to understand better the potential for cloud computing as a business tool, and how HP, and most recently GS1 Canada have pulled together a Food Recall Platform based on the HP Cloud Product Recall Platform, we have been joined by Mick Keyes. He is the senior architect in the HP Office of the Chief Technology Officer. Thank you, Mick.

**Keyes:** Thank you.

**Gardner:** We've also been joined by Rebecca Lawson, director of Worldwide Cloud Marketing at HP. Thanks, Rebecca.

**Lawson:** Thank you very much.

**Gardner:** And also, Chris Coughlan, director of HP's Track, Trace, and Cloud Competency Center. Thank you so much, Chris.

**Coughlan:** Thank you.

**Gardner:** 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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