



# Domo Arigato, SOA

**Sensei is the leading innovator of mobile-based health and wellness solutions. Providing a unique set of wellness, lifestyle and healthcare focused applications and functionality, Sensei helps individuals live better, more healthy lives. Sensei's applications provide personalized interactive experience to the broadest audience (over 300 phones across all major U.S. carriers) providing unparalleled consistency and seamless integration into back-end systems. So how do these unique applications engage multiple operating systems and specific manufacturer and handset requirements?**



(“thank you”)

**TIM DION**, CIO of Sensei, is featured in a videocast with *BTQ Vision* to clarify the open source tools behind the application and tips for success, particularly with open source

#### **Business Trends Quarterly Vision**

**How is Sensei using service-oriented architecture (SOA) to solve business problems?**

**TIM DION** SOA is a core part of how we look at delivering a lot of the functionality in the programs to both our member community as well as our consumer community. An SOA gives us the ability to very flexibly adapt to new situations. The SOA and its underlying infrastructure allows us to look at what the next generation of healthcare can be. At

Sensei, we think of ourselves as a publisher and a partner (We need an SOA) in order to be able to accommodate a lot of different needs and requests from the people that we interact with. When we look at being able to deliver content, information and messages across all the different mediums that we work with and across all the different constituencies, an SOA really gives us that capability.

**BTQ VISION** What technical challenges did you have to overcome to drive business improvement?

**TD** We ran into a lot of different things as we were going through our implementations. Our underlying platform is called “kai,” which is the Japanese word for “change.” You’ll see this theme across a lot of the different products. The word “sensei” means teacher in Japanese and what we’re all about is helping people learn. Sometimes

with the mobile phone we talk about looking at the world’s old wisdom in new ways. We talk about being able to take technology and use it in a way that really helps affect people’s lives and their lifestyles so they can make better choices at the right time.

We focus on the cell phone and mobile devices in general as a core means of being able to interact with people in a new way. The cell phone is always there, always with you and always on. Being able to have communication directly back and forth between an individual and some of the systems and programs we have in place can start to help affect things. When we looked at the challenges that came with being able to do that across a wide variety of devices serving needs from the consumers; there were a lot of reasons why SOA became a core part of our technology infrastructure.

One of the greatest challenges that

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we faced was being able to interact with people where and when they needed the interactions. When you look at the mobile phone community, there is a huge disparity among manufacturers and devices. An SOA allows us to be able to handle those interactions in a way that is both cost efficient and time efficient. We really leverage the underlying SOA to do that and there are a lot of companies in the mobile space that are still faced with those challenges. We were able to look at it in a way that allowed us to get rid of those barriers of entry into the mobile space by using a strong SOA.

**BV How does an enterprise service bus fit into your overall architecture?**

**TD** The underlying enterprise service bus is available both internally — we use it for all of our internal programs — as well as externally. When we start to interact with partners and large employers, we can interact with their back-end systems. Using JBoss’ bus we have a lot of ways to interact and connect to other back-end systems. That core piece of technology really allows us to manage the communications that we have both internally and externally.

**BV What prompted you to select the JBoss Enterprise SOA Platform and what were you using before?**

**TD** We spent a lot of time... figuring out the ideal architecture. We looked across a wide number of vendors as we were evaluating the technologies. We had our needs and our requirements in place and we were looking for a breadth of functions. We wanted not only the underlying service

architecture, but we wanted a number of other tools in order to complement that. JBoss’ suite of products was unparalleled in our mind.

The other key part of it for us was that we made a decision to focus on an open source architecture front-to-back and JBoss provided us with those capabilities. Even though it is an open source foundation, we still have enterprise quality support. We have a good sized data center that needs to be taken care of and our relationship with JBoss allows us to do that. The underlying pieces of what they pull together from an SOA standpoint gave us what we needed. It gave us the performance and the reliability, which was key to us, as well as the scale. As Sensei continues to grow, the ability for our underlying technology infrastructure to grow with us was a key factor in how we decided what we wanted to implement and roll into our overall architecture.

**BV How did it compare to others in terms of cost, ease of use and level of service from the vendor?**

**TD** Beforehand, we had a proprietary system in place for a couple of years and we ran into a number of issues and limitations that caused us to step back, take a look at what we had and see if there was a better way to do it. Sometimes when you deal with proprietary technologies there are pluses and minuses on both sides of the equation. In our world, there were more minuses on the proprietary side of the equation than there were on the open source side.

When we were evaluating, we looked at how easily we can change things and what we envisioned was an architecture that brings a lot of new capabilities to the forefront, particularly in the healthcare space.

When we looked at applying that architecture across some of the proprietary vendors, there wasn’t as much flexibility in being able to do the things that we wanted to do. When we looked at the open source world and the ability to receive fairly quick support — such as the openness of the conversations that happen around new architecture, new business models and new approaches to being able to help people in the healthcare space — it seemed that this environment was much more conducive to what we were trying to do.

**BV Are there any specific strategic goals that aligned with the benefits of open source that furthered your reasoning?**

**TD** The alignment part is always interesting because when you look at technology in business — one of the things that I focused my career on is being able to marry business and technology — and what open source brings to the table, as well as how we can use that in a way that helps change our business, the ideas, concepts and the community features of open source provide a wealth of abilities. There have been a number of times where we’ve run into some technical hurdles and then we open ourselves up and talk to the community at large, as well as the developer community, associated with JBoss and Red Hat and the old developer community in the forums that are out there. When we posted some of the issues that we were having, we would have multiple ways of solving that problem within a couple of hours. As we went through and tried things out, it became a dialogue, and those dialogues are very valuable.

The development team that we have



here, I consider them world class, but there are times when you run into things you haven't seen before, especially where we're taking healthcare and looking at it in a whole new light. A lot of things that we're doing haven't been done before and they're groundbreaking. When we look at solving those problems, the ability of using a much more collaborative approach is very powerful for us. That is one of the key reasons we try and leverage open source as much as possible. Our whole business intelligence suite is open source and there are a lot of pieces that we've pulled together into an architecture and an approach that really will help affect healthcare.

**BV Are you finding people within the community here more willing to use open source SOA and are they embracing it? Did it take some time to get there?**

**TD** It does take time to get there and where we deal with a lot of large employers, large customers and large health plans, there are times where we have to have the conversations around the benefits of open source because a lot of those companies have already bought into large proprietary solutions. When we talk through the reasons of why we chose open source, and in particular why we chose JBoss, as well as the scale of the organization and everything that's behind them — the conversation becomes much easier. Open source is gaining more and more acceptance in the corporate marketplace and the conversations are becoming less about what is good from our end because as we're partnering with these companies we want to make sure that they're comfortable with the overall solution and that they can interact with it in ways that will allow them to leverage our infrastructure.

**BV What advice do you have for other CIOs looking at SOA to help overcome business challenges?**

**TD** I think they should take a hard look at open source. There are a lot of cost efficiencies as well as time efficiencies you can gain. As a CIO in today's world, you really have to look at how you affect the bottom line and how you partner with the business in order to deliver quickly and meet the expectations of the business. As a CIO, those should be your two foremost goals when you look at what you're going to do next year. Open source tools and technology and the communities that revolve around them start to give you some capabilities that you might

not necessarily have with a proprietary solution. One of the things we've found as we've leveraged open source and JBoss is that we can very quickly accommodate new needs and requests from our customers because the development cycles for us are less than they would be with a proprietary technology. We've invested in our staff and they know and understand these things and our architecture which was designed from the ground up in order to be able to quickly accommodate new needs and requests. We are very nimble and I think that's a very important word for CIOs to think about as we go into next year where there is going to be a lot of focus on both the money and the time involved.

In the healthcare space, as well as some of the other verticals that we're exploring, time to market is essential. There is so much public scrutiny in healthcare now with everything going on in the government, with all of the approaches on how to start to make healthcare personal. It's technologies and infrastructures like what Sensei provides, that start to get that down to the individual level, letting people take accountability for their healthcare and do it in a way that's seamless, easily integrated into their lifestyle and done in a way where there's not a lot of work involved. That will make the healthcare costs all over the states start to become more manageable.

**BV Would you recommend JBoss as a provider?**

**TD** We've been very happy with our relationship with JBoss. What we've found as we've gone through a number of iterations and cycles with them is that they're very supportive, they're open from a technical standpoint and they understand what we're doing so we don't have a lot of education to do when we start entering uncharted areas. JBoss is always looking for innovative people and solutions,

so there has been a good relationship with them because of what we're doing, how we're approaching it and the underlying infrastructure that we use is fairly inclusive inside of the JBoss suite. We're a good testing ground for the different things that we're doing and the tools we use and how we use them. We've been very happy and I think people should take a look at them because there is a lot of power in what their suite of tools has done and the integration that those tools provide, as well as the ease in which you can connect them to existing infrastructure.

**BV Any closing thoughts?**

**TD** One of the areas that is interesting to me and one of the things that we've done with the JBoss tool that provides some pretty unique outcomes is when we're interacting with people. The framework that we've built provides independence from manufacturers and devices and allows us to quickly deploy an application on a mobile phone. Using the framework that we've built on top of the JBoss tools, we can do one build and affect 300 phones. A lot of our competitors have to actually port the application to each phone... When you think about SOA and the JBoss architecture and the things that you can do with that, one of the innovative tasks we've used their technologies for is building a framework that allows us to do that once. We push one button and we can have things running on (a group of mobile devices) and that's a pretty powerful feature.

When you're looking at the mobile space and the growth that's going on in the mobile ecosystem, being able to touch people's lives and give them the things they need when they need them will save both the person money and the cost is less for the health plan. There are a lot of things you can start to do in ways that will help affect the bottom line, but also give people better choices. **BTO**



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**Tim Dion** is the CIO for Sensei Inc., a pioneer in mobile and web-based wellness solutions. With extensive managerial and technical experience, Mr. Dion is responsible for operations, technology implementation and infrastructure for the company. Prior to joining Sensei, Mr. Dion was the director of enterprise architecture for Biogen Idec Inc, a \$2.5 billion global biotechnology leader.