



# UNLOCKING THE POTENTIAL OF HANA

←  
Dr Vishal Sikka,  
executive board  
member, head of  
technology and  
innovation, SAP.

ACN SPEAKS TO VISHAL SIKKA, SAP'S HEAD OF TECHNOLOGY AND INNOVATION, AND THE MAN WHO LED DEVELOPMENT OF SAP'S HANA IN-MEMORY COMPUTING, ABOUT WHY HANA WAS CREATED, HOW THE COMPANY IS BRINGING HANA TO MARKET, AND HARNESSING STARTUP ATTITUDES TO DISCOVER THE TECHNOLOGY'S FULL POTENTIAL

BY MARK SUTTON



→  
Sikka: SAP has turned to startups to develop ideas and solutions running on HANA, through venture funding and a major outreach programme.

In terms of potential impact on enterprise applications, there is not much to match SAP's HANA in-memory computing technology. Launched at the end of 2010, the in-memory technology has been delivering hundred-fold improvements in processing speeds for applications. The speed with which HANA can handle transactions is opening up a whole realm of possibilities in how data can be utilised, and leaving the company's competitors playing catch up.

Recognised as the leader of SAP's HANA efforts, Dr Vishal Sikka, executive board member and head of technology and innovation for SAP, says that the uptake of HANA has been striking.

"HANA is the fastest growing product in our history by far — I refer to HANA as my little girl; I have two boys and a little girl! We just crossed a cumulative billion dollars in revenue [in August]. We have 27 customers in what we call the '10,000 Club', where they run something in HANA at least 10,000 times faster

than they did in their production systems — it is incredible."

As of June this year, Sikka's role in SAP was expanded from being in charge of development of the company's technology products — database, middleware, platforms, mobility, analytics, cloud technology — to include innovation across all applications and development, for the whole of SAP. Sikka is also responsible for leading the design and end-user experience for SAP, and is responsible for driving all innovation globally.

The expansion of Sikka's responsibilities reflects the importance that SAP is placing on the HANA technology, he says, and its potential impact across the whole spectrum of solutions.

"The reason for consolidating SAP's development in one board area — that is my area — was that we see a complete transformation of SAP's products around HANA, around the power of this in-memory, just-in-time platform, and also around mobile, cloud technology and the more intelligent M2M systems, augmented with great design. This is the basis for how we are going forward - we believe that there is a tremendous need for human technologies, for automation and intelligence, but also for very human economies, amplifying the reach of people, and empowering people to do more with technology."

Sikka's involvement in HANA nearly didn't happen. After joining SAP in 2002, having launched two startups and spent some time in a role with enterprise software company Peregrine Systems, Sikka became SAP's first chief technology officer in 2007.

**"I CHALLENGED THE GUYS TO BUILD APPLICATIONS ON A WEEKLY SCHEDULE AND 90 DAY CYCLES — OUR FIELD COLLEAGUES LIVE ON A 90 DAY CLOCK, WHY AREN'T THE DEVELOPERS LIVING ON A 90 DAY CLOCK?"**

By 2008, however, he was not convinced the company's technology was going in the right direction, and was considering leaving. Company founder and chairman of the advisory board, Hasso Plattner, convinced him to stay over dinner, challenging him to reinvigorate the company's technology. Alongside user experience, and the 'timeless software' concept, Sikka's focus became the database — and how traditional database I/O performance was slowing down business applications.

Sikka explains: "Ten years ago it became clear that the world was heading in this direction of multi-core CPUs; I joined SAP 11 years ago, and back then, when you looked at the SAP install base, it was very clear that more than 60% of our customers were running on Oracle databases, yet when you looked at the architecture





of the RDBMS it was very clear that it was done at a time when CPUs were not multi-core. Moore's law was extended by regular performance improvement of a single-core CPU and memory was much more expensive and smaller in capacity.

"So we redesigned the database around this assumption of massive parallelism, with multi-core processing and in-memory, and columnar technology — you can analyse columns much faster. The net result of all of that is that today on the Ivy Bridge processor from Intel, HANA runs in the neighbourhood of 3.5 billion scans per second per core. That means that we have a completely predictive ability to process information, and this is unprecedented. If you can think of a calculation on some large amount of data — a complex question — if you need the answer in one second, you

## HANA EARLY ADOPTERS IN THE MIDDLE EAST

Supermarket chain Spinneys Dubai has become one of the first users of SAP HANA in the region. The retailer, which has stores across the Emirates, is using the in-memory computing, along with SAP BusinessObjects analytics, for rapid analysis of data from a range of different sources such as point-of-sale and operations, to improve decision making.

Spinneys has several initiatives that are using HANA, including its Category Performance Improvement (CPI) process, which cascades corporate strategies down to the product level, analysing sales and shopping trends.

Rohith D'Souza, responsible for business analysis and development at Spinneys Dubai commented: "We can now not only get supplier delivery performance reports in a short amount of time, but more importantly, we can now track in real time a supplier's performance at a level of granularity that was not possible to achieve before. This solution makes it easier for us not only to store vast quantities of data, but also to retrieve and analyse it at record speeds, with a lot of flexibility on how we build reports. If you take for example our Inflation Report which used to take three hours to run; we now have results in less than three minutes."

"The main goal for Spinneys is to make sure that all decisions we make are the right ones for our customers. This solution is helping us to streamline internal processes, allowing us to make better-informed decisions much faster, and ultimately, helping us serve our customers better. That's what we strive for every day".

The company is also using SAP BusinessObjects' Mobile Business Intelligence.

D'Souza said: "A manager can go down to the store, tablet in hand, analyse a range of products and their performance on the shop floor. If there is a gap on the shelf, he can instantly see if the stock of the product is low, and if a purchase order has been placed for it already. All in real-time!" concluded D'Souza. "This represents a big improvement in the way we will do things going forward. With this technology, the possibilities are limitless."

Marc Haberland, MD of business analytics consultancy Clariba, which carried out the implementation, said that retailers can leverage data from point-of-sale and operations such as purchasing, stock, and financial data to better understand stock levels and wastage, and forecast inventory movements, which are critical to managing the profitability of a retail organisation.

can calculate in advance how much CPU and how much memory it is going to take. This is unprecedented.

"What that does is gives us an opportunity to transform everything, all our products. We are now running our business suite, which is our mission critical software — ERP, CRM, supply chain etc, but we are also running our cloud applications — every single product of SAP, Ariba, SuccessFactors, all our analytics products are now running on HANA, or are optimised on HANA, or are on the way to do so," he says.

An important part of getting HANA into wide usage has been SAP's efforts to promote it across as wide an ecosystem as possible. SAP has an existing partner network, including traditional consultancies including Accenture, Infosys, Tata, Cap Gemini,





Companies are developing a wide range of HANA-based solutions, many of which SAP could not have anticipated, says Sikka.

## TIMELESS SOFTWARE

In 2008, Sikka wrote 'Timeless Software', essentially a concept of how software could continue to develop and grow, without disruptive upgrades. The approach was influenced by SAP's own customer relationships and solutions, where applications manage a wide range of business processes such as finance, sales, logistics, manufacturing, strategy and compliance, and are in place for many years. Systems need to be updated and amended as the organisation's requirements change, but mission-critical processes cannot be impacted by the changes.

Sikka explained the concept: "So this is the essential duality that our customers expect from their IT landscape: Deliver operational efficiency via coherence and stability, while enabling business growth and managing change necessary to survive and grow. And our prime requirement then becomes: Enable evolution of our software without disruption; provide a large breadth of stable functionality, over generations of change."

and Deloitte, who have all built massive HANA practices, Sikka explains. SAP works closely with Intel, as HANA only runs on Intel's x86 processors, and the company has even collaborated with other technology providers who would traditionally be seen as competition. But it is in the area of start ups where SAP has been highly active in pushing HANA to the market.

Another SAP initiative headed by Sikka has been to create a more agile approach to development, which has resulted in the creation of the SAP 'AppHaus'. Used by 2,500 SAP employees, the seven AppHaus facilities worldwide have been designed as purpose-built places for collaborative work, which are mainly used by development teams working on things like mobile and consumer apps, a big departure from SAP's usual enterprise focus and culture.

"The buildings themselves are new, they are open, they are de-



signed for collaboration and openness," Sikka says. "It happened because I challenged the guys to build applications on a weekly schedule and 90-day cycles — our field colleagues live on a 90-day clock, why aren't the developers living on a 90-day clock?"

"They said we have to build that kind of application outside of our normal offices. The key thing is that building new products requires new ways of working, new ways of working require new ways of thinking, that is all around openness and commitment, to support others and to build things for a longer term. That is the thinking that goes into our startup endeavour."

SAP has been keen to harness the start up ethos for HANA. In February 2012, the company launched a series of SAP HANA Startup Forums, which aimed to work with new companies to develop creative ways of using HANA. As of August 2013, SAP has engaged with over 6,000 companies in 57 countries.



## “WE FOUND THAT WITH A BREAKTHROUGH TECHNOLOGY LIKE THIS, THE BARRIER IS IMAGINATION. WHAT WOULD YOU DO IF YOU COULD DO SOMETHING 10,000 TIMES FASTER?”

Sikka explains: “The reason for the forums was very straightforward. We found that with a breakthrough technology like this, the barrier is imagination. What would you do if you could do something 10,000 times faster? Frankly, SAP’s imagination was limited to more or less the same things we always did: faster purchasing, better budgeting, better financial planning, better demand planning, better MRP runs, things like this, which are great, but there are amazing problems out there that require thinking beyond these definitive areas. So we started to talk to startups; startups are always the optimists, looking at what the world could be like, and now we have 543 start up companies building their products on HANA. Twenty-five of them are already in production. This is unbelievable, this just happened in 18 months.”

SAP has also expanded its venture capital efforts with a billion dollars invested, through the independent, SAP-funded SAP Ventures, developing a dedicated fund for HANA startups, and investment in other venture capital firms to encourage them to invest in HANA.

SAP has held a HANA forum in Turkey, and is keen to hold an event in the Middle East, to tap the region’s growing startup sector, and to cater to interest from customers in the region.

Sam Alkharrat, managing director, SAP Middle East & North Africa, explains that the company has done around 500 training sessions on HANA across the whole ecosystem, and while the market in the region can be very vendor-driven, SAP is seeing a lot of traction as organisations begin to see the potential: “There is definitely a lot of traction. The prime vehicle to innovate here is education, just to get that education mindset going. Once you have that going, it is a roller coaster, people start asking more questions, and we are starting to see some early adoptions. Some of our largest customers are looking into it as a very serious transformational platform, not just for analytics or speed, but to get cost savings, simplicity and innovation.”

So does Sikka believe that since being convinced to stay with the company in 2008, he has helped SAP to change the direction of its technology for the better?

“I became the CTO in 2007. The three pillars of our revolution were a next-generation runtime platform, which is HANA. Every time a new processor comes out from Intel, HANA gets better. This is a sign of a successful technology— that it can simultaneously serve legacy and unprecedented new areas.

“The second pillar was the principle of non-disruptive evolution. Because we build complex systems that work with customers for decades, our new technologies have to help them evolve non-disruptively. The third one is the power of design thinking. I think we have made tremendous strides in the last four years since that dinner with Hasso, but I would also say we are still at the beginning, we are still early, and the best is yet to come.” ■

