

SAP's HANA Performs Well in Pilots, Threatens Oracle

Companies: AAPL, CSCO, DELL, ETR:SAP/SAP, GOOG, HPQ, IBM, INFA, ORCL, TIBX, TYO:6702

March 1, 2012

Research Question:

How is adoption of SAP's HANA data analysis platform affecting the business software space and hardware/database vendors?

Summary of Findings

- [HANA](#) is performing well in pilot programs and is one to two years away from full implementation. Proof of concept is taking place as SAP AG (ETR:SAP/SAP) builds business cases to accelerate its sales and marketing process.
- HANA implementations pose a near-term threat to [Oracle Corp.'s \(ORCL\) Exadata](#). The SAP platform also will spell long-term trouble for Oracle by eliminating the need for Oracle databases and making servers less necessary.
- Accessing data in real time from the Web to mobile devices holds important potential for HANA and middleware vendors like [Informatica Corp. \(INFA\)](#) and [Tibco Software Inc. \(TIBX\)](#), which sell connectors to build bridges between HANA and its applications.
- As SAP builds and adds more applications for HANA, it is expected to reach more clients and speed up the adoption rate.
- Social network data reporting is becoming increasingly important. HANA is entering the market at the right time to provide analysis and reporting on this new big-data set.
- HANA's speed is unmatched and allows companies to view and respond to data in real time, though not all companies have a critical need for the power HANA provides. Sources' main concern for HANA is its high cost during a time of tight budgets.

Silo Summaries

1) IT CONSULTANTS/SYSTEMS INTEGRATORS

Two sources called HANA a game changer, and all four sources believe the technology will benefit from an increase in business cases that will accelerate SAP's sales and marketing efforts. **Three sources said HANA adoption will ramp up in one to two years.** Large companies are SAP's primary target because they can afford the cost and fully use the technology's power. **HANA's emergence will result in a decline in databases and servers, with Oracle taking the biggest hit.** Two sources cited a significant opportunity for HANA to be used to access real-time data via mobile devices.

2) INDUSTRY SPECIALISTS

These three sources said HANA is very much in the pilot stage. **Adoption will pick up as more applications are added throughout 2012, and then full implementations will begin in 2013.** Speed is HANA's greatest value, creating a business advantage that will serve it well during the sales process. HANA's cost is a major drawback, limiting its current appeal to only the largest companies that can fully utilize its speed. **Oracle is the most threatened by HANA as the new technology will hurt sales of Oracle's Exadata in the short run and diminish its database business over the long haul.**

3) HARDWARE MANUFACTURERS/CONSULTANTS

HANA is in the pilot phase with a handful of customers, according to these two sources. **One said HANA's growth potential is significant. The other source called HANA a disruptive technology. Having HANA available on mobile devices is a potential breakthrough for SAP and will set it apart from competitors.** HANA also is reaching the market during an explosion of data on social networks, creating a new function for the platform. Cost is the biggest concern as budgets remain strained. HANA threatens Oracle's database business.

4) ENTERPRISES USING SAP SOFTWARE

Only one of these five sources has implemented SAP's HANA in a pilot program. But they acknowledge the power and value of HANA's technology. The platform's key advantage lies in performing projects that once took hours in mere seconds, providing real-time data access. **HANA is expected to provide even greater benefits as SAP creates more applications for the platform.** Three sources said they likely would not use HANA to its full potential, resulting in a wasted investment. HANA reduces the need for Oracle and IBM databases. Having data available in real time on a mobile device is an advantage for HANA, according to one source.

	HANA Rollout	HANA Threatening ORCL	HANA's Potential in Mobile Sector
IT Consultants/ Systems Integrators	↑	↑	↑
Industry Specialists	↑	↑	N/A
Hardware Manufacturers/ Consultants	↑	↑	↑
Enterprises Using SAP Software	➔	↑	➔

SAP AG's HANA Data Analysis Platform

Background

SAP's HANA (High-Performance Analytic Appliance) is a data analysis platform that combines in-memory software with hardware from the company's leading partners. HANA processes high volumes of data, both operational and transactional, in real time, using an approach that queries data stored in RAM (random access memory) instead of on a hard disk or flash storage. HANA can change a company's IT architecture and usage of a database and business software and hardware.

CURRENT RESEARCH

This report aims to understand what effect SAP's HANA is having on business software as well as on the hardware and database industries. Blueshift employed its pattern mining approach to establish and interview sources in five independent silos:

- 1) IT consultants/systems integrators (4)
- 2) Industry specialists (3)
- 3) Hardware manufacturers/consultants (2)
- 4) Enterprises using SAP software (5)
- 5) Secondary sources (5)

Blueshift interviewed 14 primary sources and included five of the most relevant secondary sources focused on HANA's benefits, innovation, competition with Oracle, and the trend towards in-memory databases.

Silos

1) IT CONSULTANTS/SYSTEMS INTEGRATORS

Two sources called HANA a game changer, and all four sources believe the technology will benefit from an increase in business cases that will accelerate SAP's sales and marketing efforts. Three sources said HANA adoption will ramp up in one to two years. Large companies are SAP's primary target because they can afford the cost and fully use the technology's power. HANA's emergence will result in a decline in databases and servers, with Oracle taking the biggest hit. Two sources cited a significant opportunity for HANA to be used to access real-time data via mobile devices.

► Head of SAP sales for an EMEA consulting and integration company

This company's largest clients are piloting HANA, in part because they can afford the cost and use the platform to its fullest potential. The source wonders if other clients have a need for such fast reporting, and believes HANA will need 10 years to fully infiltrate businesses of all sizes. The result will mean fewer server and database sales for competitors.

- "So far three clients out of 100 use HANA, but they are our biggest ones. All have pilots and are happy about HANA's speed."
- "Our largest clients will continue to expand HANA, and some other large ones will implement it. There will be a few in the top 10."
- "Speed is the main advantage—quick reporting, the fastest ever seen. So fast, we wonder if clients need it."
- "Price is the disadvantage. It is impossible to propose to small companies or companies with less than a million records. I hope SAP lowers the price when they break even with their investment."
- "The hardware/software paradigm changes with HANA, but it will take 10 years. We are starting with large clients that need fast reporting and will take it from there. They will substitute servers with a HANA box and traditional databases with HANA memory database. Software applications will adapt to in-memory; some will go, some will stay."

Database vendors will be impacted. SAP is attacking Oracle in two ways: in the high end with HANA and in the low end with their own database. In the high end they are using the argument that HANA is faster, but it costs a lot. In the low end they are using the argument of price. An SAP database costs 8% of the SAP license while an Oracle database costs 15%. They are gaining some market share.

*Head of SAP Sales
EMEA Consulting Company*

SAP AG's HANA Data Analysis Platform

- “It’s too far away to predict if clients will run their entire system on HANA. It will take 10 years. Only a few large companies will do it earlier.”
- “Database vendors will be impacted. SAP is attacking Oracle in two ways: in the high end with HANA and in the low end with their own database. In the high end they are using the argument that HANA is faster, but it costs a lot. In the low end they are using the argument of price. An SAP database costs 8% of the SAP license while an Oracle database costs 15%. They are gaining some market share.”
- “In the high end, the risk is that clients might decide for Exadata if they need to save money. But it is not as fast as HANA. SAP clients are more likely to go with an SAP solution. In any case, SAP wants to stop Oracle from selling more within their client base.”
- “It is difficult to say what the implication is for hardware vendors. So far the impact is very minimal. Most changes are expected in the mobile devices area as data will be available for them to use anywhere. Apple has an edge right now as they are ahead, but passing from iTunes slows things. Android devices are still behind, but they are picking up fast. Apps are pouring in. In a year Android will be better than Apple-based devices. Since Android is more open, we will see Android device manufacturers selling more. Android will be the platform of choice in a year.”

➤ Partner for a global consulting company

HANA can become an effective and game-changing tool for certain businesses, but its incredible speed is needed only by a narrow client base. This source expects HANA to gain momentum in a few years, after which it will reduce the need for databases, servers and various middleware.

- “Globally, we have three or four clients who use HANA, which is a good number. We have it ourselves, and two clients are in real HANA mode.”
- “We have a lot of interest from clients, and I think HANA will sell well. We just have to enter in the right frame of mind. HANA was out in 2011 and sold as a technological breakthrough, but SAP had not looked enough at how HANA was changing the business process. ... As consultants, we can see the difference HANA can make in processes; once we can show that, it is easy to sell. We just have to think out of the box.”
- “HANA adoption is rapid in our large clients. It will be like the iPad hype as people will see what HANA can do and will want it too. Some just want it to have it for the technology—typically CIOs, but CEOs and CFOs will want it for they can improve the way they do business. If you eliminate servers and databases, it can be advantageous.”
- You can’t talk to an SAP person without talking about HANA these days. HANA with mobility and analytics are the main requests from our clients.”
- “One use of HANA we had not thought about was real-time analysis of unstructured and structured data from social media. One of our clients can see in real time what is said about them on the Web by bloggers and answer in a timely way before some issues are blown out of proportion. Having that data a few hours later would be useless. For this and other reasons, we expect our HANA base to grow this year but cannot say by how much.”
- “As you can run your report faster, three seconds instead of three days, you have to look at how that improves your business. ... We have a client selling goods through TV programs. They could only know what they sold the day later. Now they know right away. It means they can refurbish the stock in real time and not run out of products, or they can run the show until they finish the stock. They have more choices.”
- “In banking, new rules require that funds between different countries are transferred in a day instead of three. To do that quickly is going to be hard with batch computing when tasks are done overnight. Instead, it is instantaneous with HANA. Telecom and other verticals too can benefit from HANA; we just have to learn how.”
- “SAP is working on getting companies to move over to HANA entirely, and it will happen in a couple years.”

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Partner, Global Consulting Company

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SAP AG's HANA Data Analysis Platform

- “HANA is a big technological change. You can run HANA without the traditional database and servers. Applications will dialogue with HANA, and all you need to do is store the data you need to keep.”
- “With HANA, servers are gone. Just HANA boxes and storage are left, together with SAP application servers.”
- “SAP also claims there is no need for extra middleware, but I am not a specialist. There will still be a need for some storage as companies will not want to keep all their data in memory. They could use solid disks, tape or traditional disks. So far disks are used mostly as DAS [direct-attached storage].”
- “Certainly, there are a lot of emerging countries where ERP is still the main product sold; you have to create data before you can sell analytics and HANA. In developed countries, ERP does not generate growth anymore, but demand from BI HANA and mobility can't counterbalance a decrease in ERP and create growth.”
- “The really important issue with HANA is that you can improve your business process; that is HANA's key to success. We already see in several industries and verticals how HANA can be a key driver to success. It is important that clients know that HANA is not a technology but a game changer. It is our role as consultants to show that to SAP customers.”

► Director of international alliances for a global IT consulting firm

HANA is good for retail companies, and wide adoption of the platform will take only a matter of time. Because of HANA's high price tag, SAP will need to build up HANA case studies to help its marketability. HANA presents a threat to Oracle's database business.

- “Globally, we have one in the retail area with several others in the pipeline. SAP has sold HANA successfully to retailers, but they have also done good deals in automotive, healthcare and insurance.”
- “We are building our business cases and getting started marketing HANA. We have to show prototypes and go in different industries, and for that we need case studies.”
- “Retail companies can already take advantage of HANA's real-time analysis of data warehousing when managing their stocks, sales and logistics. We are also working on manufacturing and automotive where there are many advantages.”
- “Price is the main problem for HANA, so there has to be a good advantage to counterbalance that.”
- “HANA is a big change. It changes business processes and eliminates the use of traditional databases.”
- “The plan is to get companies to run their entire system on HANA. SAP has a good roadmap in three steps, and the plan is that components will be released every year until everything runs on HANA. It is a question of time.”
- “The main change is the elimination of the database. It is a clear message for Oracle that they will lose database business; after all, SAP is one of their biggest [clients](#).”
- “HANA is giving and will give the hardware industry a new push to provide HANA boxes, at least for [Fujitsu \[Ltd./TYO:6702\]](#) and [IBM](#), which are working very closely with SAP.”
- “SAP has already sold €160 million of HANA in 2011. That number will grow a lot in 2012. And [mobility](#) reached €110 million in 2011. Those products [HANA and mobility] were only sold at the end of the year. SAP will live or die with HANA.”

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*Director of International Alliances
Global IT Consulting Firm*

► Partner focusing on technology for a global IT consulting company

HANA is in the proof of concept stage, looking for successful business cases to drive its sales and marketing efforts. Targeting buyers on the production side will prove more effective than selling the platform to CIOs. The potential to run HANA all on mobile devices is exceedingly attractive as it would eliminate the need for servers and databases. Full implementations are expected to ramp up considerably in 2013.

- “They just had a very fast ramp up, but they have been selling the product for only six months. There are no productive solutions at the moment at client sites, and all implementations are just proof of concept.”
- “There will be more proof of concepts soon and some productive implementations in the BW space. HANA 2.0 can actually replace BW, and we might see BW users upgrade to HANA directly.”
- “In a year, there will be the full HANA ramp up, and by the fourth quarter of 2012 you will see some pilots. General availability will be around the second quarter of 2013. This year it will be for showing clients what HANA can do with some operational BI/BW projects; full-scale implementations will only be possible in 2013.”

SAP AG's HANA Data Analysis Platform

- “HANA is very interesting from a technology standpoint. ... Users are trying to find out how they can benefit from HANA, and we are helping clients to take that step with our U.S. trial center.”
- “We are trying to find business industry arguments, some scenarios where HANA can help. We should not try to figure out how to do the same processes in a different way, but we should do different processes. There is plenty of interest in retail, and there can be a place for HANA in smart grids.”
- “HANA is not only a report accelerator but a business scenario creator. And to show what HANA can do, CIOs are maybe not the best people to go to. It should be the sales directors, business directors or logistic directors, who can understand what having real-time access to a family of products and managing their stock can do to their business.”
- “Some say all this can be done with BW or other data warehouse software, but many times batch processing can take hours or days. Once HANA is transactional and all ERP runs on it, you will have all company data at your fingertips on your mobile device. This could be a competitive advantage.”
- “HANA will change the IT architecture. Game rules will change. There will be no latency time and no data extraction. The IT ecosystem would change.”
- “The next releases and SAP roadmap are clear: All of the IT system will run on HANA.”
- “HANA 2.0 is already a substitution of BW. When HANA will reach maturity it will have a transactional database with real ‘real-time’ features, at which point most databases will be gone. Oracle will be the main loser there. It will not be able to counterattack. If clients need just some acceleration, Exadata will do for now at a quarter of HANA’s costs, but the clients will still have a traditional database with batch processing.”
- “Even if the extraction is faster with Exadata, we are not in real time. HANA has a different data structure; you don’t need extraction and restitution anymore. There will still be a need for middleware in some cases. ... However, SAP will tend to sell everything, so some middleware vendors will be hurt.”

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*Partner Focusing on Technology
Global IT Consulting Company*

2) INDUSTRY SPECIALISTS

These three sources said HANA is very much in the pilot stage. Adoption will pick up as more applications are added throughout 2012, and then full implementations will begin in 2013. Speed is HANA’s greatest value, creating a business advantage that will serve it well during the sales process. HANA’s cost is a major drawback, limiting its current appeal to only the largest companies that can fully utilize its speed. Oracle is the most threatened by HANA as the new technology will hurt sales of Oracle’s Exadata in the short run and diminish its database business over the long haul.

➤ Business intelligence analyst for a technology consulting and benchmarking company

Companies are experimenting with HANA at the moment. Its speed creates business advantages, and SAP will be smart to sell it in this manner. Adoption will not occur until the third quarter when SAP will release more HANA applications. Migration to HANA among existing SAP clients will be easy, and Oracle stands to lose the most in this transition.

- “In my area I have heard that 60 clients have installed a box and are playing with it.”
- “According to our calculations and seeing how slowly SAP releases HANA-compatible applications, we will not see any adoption before the third quarter. They had promised a lot of applications, but they have not delivered them. However, they have a roadmap and are releasing software bit by bit.”

There are some negative points. The main one is the lack of HANA-native applications. There are also technical problems; the data migration is not always smooth due to some language incompatibility. There is a need for vertical applications that would speed up adoption.

*Business Intelligence Analyst
Technology Consulting Company*

SAP AG's HANA Data Analysis Platform

- “HANA is fast. It is a compressed database through which you have instant access to data. If you are an SAP client, it is very convenient. A bank could have, say, five years of client operations at their fingertips while they talk to the client. Retail companies can manage their stock in real time.”
- “There are some negative points. The main one is the lack of HANA-native applications. There are also technical problems; the data migration is not always smooth due to some language incompatibility. There is a need for vertical applications that would speed up adoption.”
- “By the end of the year, we will start seeing clients run their entire system on HANA. I don't know if all systems will be on HANA or companies will keep only part of it because it is an expensive solution.”
- “For database vendors, there will be some changes. Many SAP clients will not need another database when they run HANA. Oracle will lose some market share even if some SAP clients keep Oracle. Oracle ERP clients will probably keep the Oracle database as it would be quite complicated to move to HANA.”
- “Exadata and [Exalogic](#) will have some problems as well. Already companies do not like the fact that Oracle is both their software and hardware provider.”
- “There will be more choices with HANA. Initially, SAP will have a harder time to work and coordinate with seven different vendors, but in the end the ecosystem will be richer. While they will be late in the beginning, once they start they will be on a roll. There will be more cross-selling and more innovation because more companies are involved. More people will work on HANA and its hardware.”
- “On the other side, there will be just one view. Price for HANA boxes will go down and clients will be able to have different quotes. We think SAP clients will do the right choice with HANA; there will be no hesitation.”
- “In the middleware space, SAP clients who run HANA on SAP will need no middleware. But HANA will not work outside SAP and in the Web, so there will be a need for the usual middleware players. SAP will need to build some plugs for connecting external software.”
- “If SAP manages to deliver the right applications, with a complete analytics/BI platform on HANA and ERP later, the adoption will be fast. The initial BOBJ for HANA will already sell well. ... They have been quite calm lately. We expect some increase in noise as there was some months ago. They might be waiting to see recovery before they do that.”

If SAP manages to deliver the right applications, with a complete analytics/BI platform on HANA and ERP later, the adoption will be fast.

*Business Intelligence Analyst
Technology Consulting Company*

➤ Database specialist with an SAP consulting partner

Adoption of HANA has been slow and will not pick up until 2013 when a new application will be released. Still, the source said many people are training with HANA. The platform is too expensive for small and midsize businesses, but its benefit to large companies looking for increased speed and data analytics is its calling card. HANA will challenge Oracle as it moves into providing databases.

- “We have no client with HANA. So far, people are still training; it is still early on. I have the feeling that when SAP introduces a new product, they will do it in Germany first and in EMEA after. At [SAPPHIRE Orlando](#), SAP was all about HANA and mobility. Its North America sales reps have incentives to sell those products. However, we have not seen much adoption so far.”
- “2012 will still be a ramp up, but in 2013 we will see more full-scale implementations coinciding with the new ECC [ERP Central Component] running on HANA.”
- “It is a new technology that is really fast because it is all in-memory, good for large companies that deal with lots of data. I think small to midsize companies will have a problem from a cost perspective.”
- “SAP partners and integrators will be forced to work more closely with hardware vendors as they will need to quote HANA boxes in their sales cycles. This partnership will be key to win deals as the ones who will be able to provide faster response will have a competitive edge.”
- “The other big change will be on the database side. SAP was database-agnostic until a while ago. Now they are providing several databases with Sybase and HANA. This will be a challenge to Oracle; it is really an

The other big change will be on the database side. SAP was database-agnostic until a while ago. Now they are providing several databases with Sybase and HANA. This will be a challenge to Oracle; it is really an aggressive move from SAP. They are moving into a new market with a core product.

Database Specialist

SAP AG's HANA Data Analysis Platform

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➤ **Author of books on data warehousing and business intelligence, and a former executive in the industry**

The source knew of one retail-oriented pilot that has shown HANA's value in providing real-time data. The financial sector also could be an important market for HANA in planning and forecasting. HANA lacks applications, which is holding it back from greater adoption, but more applications are expected as early as March. HANA sales will increase if properly positioned in the sales process. Oracle is not at risk in the short run because of the expense of training staff on a new system and trading out equipment, but HANA will slow sales of Oracle's Exadata through speed and better scale. HANA's all-or-nothing proposition is both a benefit and a deterrent.

- “I know of one client in EMEA who has a pilot in the footwear sector. They want to consolidate on HANA different systems, mostly planning.”
- “We would like to accelerate adoption, but there are not enough applications a part BW. The finance sector could be a good one for HANA in the planning/forecast profit analysis area. We will know better in March when more products are available.”
- “You have to know how to present HANA; it is not just an in-memory accelerator for BW. It would be too expensive for just that. We think HANA has to be part of a BI project. We use BI4 as a base, and when we see a client who has 4 to 5 TB of data to deal with, we can suggest HANA for real-time forecast. Retail consumer products are a target, and finance is the other one. Banks can be difficult if they don't have a full SAP system.”
- “For having all on HANA, you need time. At one point all SAP was going to run on Java, according to SAP, and that never happened. I see more APO [[Advanced Planning and Optimizer](#)] running on SAP, a massive adoption of HANA for APO.”
- “I don't see Oracle being at risk in the short term. To save on costs, you would need to get rid of Oracle everywhere, and that is going to be difficult initially. Also, clients find it difficult to change a database for human resources issues. If they have people trained on Oracle, they would need to retrain them on HANA or other software.”
- “But HANA will block Exadata/Exalogic adoption. Exadata works on SAP right now, but SAP clients will think twice before investing on Exadata or [Exalytics](#). They see SAP investing all they have on HANA, and HANA and Exadata are not compatible. Right now HANA is more expensive as it is in-memory, but prices will go down. In the long term, SAP will win. It is the most innovative solution of the two. And it will be the heart of the IT system.”
- “HANA is all or nothing. That is also a negative point. It would be ideal to have HANA/Sybase for some part of companies' data and some form of cheaper medium for the less important data. Today, if you have BW on HANA, all of it is on; you cannot choose half. As SAP charges per core, it can be expensive to run HANA on a big data warehouse. Oracle has solved this by having the client run the system on Exadata and add Exalytics on top for the most important data. But Exalytics is 1 TB and that is all; it is not scalable and HANA is. And Oracle boxes are not a match to HANA for speed.”
- “We have a client who has 2 TB on BW and is thinking of going to HANA for decision-making process. But for clients who need a good transactional tool, Exadata is the best choice today. ... HANA will be a good transactional tool in the future, but when you do that it will be a big and difficult project.”
- “Another negative for HANA is that SAP has no cloud offer on HANA or at least not that we are aware. I find that strange.”
- “In the middleware arena, I see no big change. While it is true that HANA has its own ETL, that will not work outside SAP and in the Web. Tibco is a great offer for that, and HANA will not hinder Tibco's success.”

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*Industry Commentator &
Former Executive*

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3) HARDWARE MANUFACTURERS/CONSULTANTS

HANA is in the pilot phase with a handful of customers, according to these two sources. One said HANA's growth potential is significant. The other source called HANA a disruptive technology. Having HANA available on mobile devices is a potential breakthrough for SAP and will set it apart from competitors. HANA also is reaching the market during an explosion of data on social networks, creating a new function for the platform. Cost is the biggest concern as budgets remain strained, especially in Europe. Sources believe HANA will move into full implementations in one to two years. HANA threatens Oracle's database business.

➤ Global SAP alliance manager for a large SAP partner in software, hardware and consulting

Only a handful of customers are using HANA, but they represent more business than those using ERP. The source reported a focus on making HANA available on mobile devices to give users real-time access. Cost is the primary concern, and full implementation of HANA will take two years. Still, HANA represents a move away from Oracle databases.

- "We have less than a 100 clients now, so it is only a fraction in terms of numbers. But HANA/BW projects tend to be rather big, and growth in that area will be huge. In other words, we tend to do more volume with fewer HANA clients than with plenty of others just on ERP."
- "We target between 100 and 200 clients in the next two years, but the most important aspect is that the clients we have today who started pilots will go into production with HANA. Projects will be quite large as they roll out HANA on all data warehouse platforms. So far, we are concentrating on running HANA on BW and having mobile devices take advantage of the new technology."
- "HANA's main advantage is that it is fast and that it gets and manages data in real time. ROI can come from business advantages more than real cost savings in the infrastructure. For example, today you can—with HANA and [SAP's] [Sybase](#)—access your data in real time on mobile devices. That is a tremendous tool for our clients. Then, when our clients will be able to save on database costs, it might be also a good tool to save some money."
- "The real negative point of HANA today is cost. The license is expensive, and the hardware is even more expensive as flash memory is still not cheap. As per everything, the hardware cost will go down soon."
- "By making data available in real time, HANA is a big change for the way we work and a big change in the IT department. In the short term the change is minimal, but as we roll it out on a company basis we will see less need for traditional databases and some software tools become obsolete. All software will need to be redesigned for in-memory technology; hardware will have to adapt. Right now it is difficult to say because we also have a huge amount of data to deal with coming from different sources, so storage sales are not threatened."
- "This is the plan: SAP clients will be able to run HANA on all their software and will be able to have just the HANA database to run. We will see that from 2014 as there are not enough tools now."
- "I see an opportunity for middleware companies such as Informatica as we need to get more tools for MDM [master data management] and big data [structured and unstructured], but those tools need to work with HANA. I see people moving away from the Oracle and IBM databases as they will not be needed. However, they will push their own in-memory solutions and will not stand there watching SAP taking their clients away. SAP plans to be the No. 2 database player by 2016. SAP really wants to hit Oracle in its database business because it is the most important for Oracle."
- "This development is very positive for hardware vendors. Hardware needs to perform more with HANA, so hardware becomes more important and the vendors that invest more will win. You cannot just

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*Global SAP Alliance Manager
Large SAP Partner in Software*

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Large SAP Partner in Software*

SAP AG's HANA Data Analysis Platform

take any in memory machine and plug HANA in. Fujitsu, IBM, HP [[Hewlett-Packard Co./HPQ](#)] and [Cisco \[Systems Inc./CSCO\]](#) have already invested a lot and are leaders. [Dell \[Inc./DELL\]](#) has not done enough. Storage vendors will also benefit because the amount of data to store will increase and is increasing dramatically already. However, it is difficult to understand what kind of storage will be needed. Expensive disks could suffer, but it is speculation as we also have a growth of data in other areas that is not affected by HANA technology."

- "So far we are looking at implementing HANA in data warehouse environments, so it is confined to analytics. However, as new products arrive we will start implementing HANA in the whole ERP system. SAP says they will have working products soon, and I think by 2014 we can see the first implementations."

► Global SAP alliance manager for a hardware manufacturer and global consulting company

HANA projects still are only in the pilot phase, but the platform represents a disruptive technology that is emerging with the growth of social networks and could play an important role in reporting and analyzing that data. Economic difficulties in Europe are slowing down HANA's rollout, but adoption is expected to pick up in 2013 once more applications become available. Not all companies have a need for HANA's speed.

- "We had several HANA sales. All our clients and the ones I know from SAP have implemented just pilots and tests, no full implementations."
- "There will be more pilots as SAP has done a good job marketing HANA and there is a hype around it. Clients are still at the proof of concept stage."
- "HANA is a disruptive technology. It is fast and is a lever for SAP to have clients rethink their systems and work on their data. It is related to the need to work on structured and unstructured data, but it is not the solution to that. It is good that HANA is out at the time when data is increasing from social networks. HANA's marketing pitch is solid and will continue to help SAP sell more products."
- "Market conditions ... in Europe are not favorable to HANA as it is an expensive product. You cannot say, 'Let's implement HANA and see.' You have software and hardware requirements, and you have to run HANA on certified boxes. ... If you need fast analytics capabilities, you might decide to do that with [IBM's] [DB2](#), Oracle, [BOBJ](#) and other tools, adding extra storage or other hardware/software solutions that are not so expensive. Oracle and IBM offer alternatives that can be an acceptable alternative to HANA. At the moment only few companies need HANA speed. ... One other problem is that HANA is not a transactional tool today; until that happens, some companies will not consider implementing it."
- "All hardware and databases are still in place. There will not be any significant change until 2013 when more HANA applications will be available. Then there might be an impact on databases."
- "Today it is not possible to run your whole system on SAP, and it will not be for another 24 months. The technology is solid but not enough. Many pieces are still missing, and many problems have to be solved. I don't expect solid releases until 2013 and so we will have to wait to see a companywide HANA deployment."
- "Selling boxes is not a priority for us. We don't push our hardware, but we are looking at client needs. I don't expect any big change for now as far as hardware is concerned. Databases are still running. If there is any change in database market share, it will not be because of HANA. ... SAP sales reps are doing their best to get clients to change their database and stop using Oracle."
- "In the next year, pilots will continue. SAP's marketing engine is strong. The long-term vision is very good, but more applications need to be available. For the time being, there will be only pilots, proof of concept, evaluation and negotiations, and no database migrations. ... Then, from

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*Global SAP Alliance Manager
Hardware Manufacturer*

In the next year, pilots will continue. SAP's marketing engine is strong. The long-term vision is very good, but more applications need to be available. For the time being, there will be only pilots, proof of concept, evaluation and negotiations, and no database migrations. ... Then, from 2013 and if SAP delivers what it has promised in terms of HANA's compatible application and infrastructure, it will be a different story.

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Hardware Manufacturer*

SAP AG's HANA Data Analysis Platform

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4) ENTERPRISES USING SAP SOFTWARE

Only one of these five sources has implemented SAP's HANA in a pilot program. Others have found solutions that are more relevant to their needs, but they acknowledge the power and value of HANA's technology. The platform's key advantage lies in performing projects that once took hours in mere seconds, providing real-time data access and an important business advantage. HANA is expected to provide even greater benefits as SAP creates more applications for the platform. Three sources said they likely would not use HANA to its full potential, resulting in a wasted investment. One source's company plans to wait two years before considering a HANA pilot, while another company's requirements are nearly a decade behind current data standards. HANA reduces the need for Oracle and [IBM Corp.](#) (IBM) databases. One Oracle client said HANA is attractive because, unlike Oracle, it allows vendor expansion. Having data available in real time on a mobile device is an advantage for HANA, according to one source.

► Internal IT architect and group consultant for an aerospace and defense company

This source has implemented a HANA pilot program at the cost of nearly \$1 million. He described the implementation as easy, but said it has been placed on hold because his company is performing a cost/benefit analysis. Companies needing real-time data, such as manufacturers and retailers, are sure to see an immediate benefit from HANA, which has the potential to render Oracle and IBM databases less necessary.

- "We have implemented a pilot for the cost of a bit less than \$1 million. SAP charges us by the 64 GB unit."
- "We implemented a pilot in 2011, and it is fully functional. It was quite quick to implement in our data warehouse system. We were going to expand it, but at the moment we have yet to decide what to do."
- "The biggest advantage was time. Reports that took hours are done within seconds. HANA works well, and we had no major problems."
- "The biggest disadvantage is cost. Is the amount of money well-invested? While it is important to reduce reporting time, is it worth the cost? We do not have an answer yet. And will SAP reduce HANA TCO [total cost of ownership] soon? Should we wait? Can we save on Oracle database license costs? Those questions are not answered yet. We need to find business advantages. This is clear for some companies but not for us."
- "Because HANA is a pilot, there is no change in the IT infrastructure. Should we run it all the way, we might save on database costs, but is that enough to balance the cost of the HANA license? New applications are coming, but it might be too early to do a complete analysis."
- "Running our entire system on HANA would be a long-term decision. First, we need to complete the installation, and we have to see what benefits we have. Manufacturers and retail companies have an immediate benefit, but with our kind of production we might not need to be so fast. Having real-time data on mobile devices is a real plus, but there is some slowness on the Apple [Inc./AAPL] devices and we are still waiting for some apps for [Google Inc.'s/GOOG] Android that should come soon. Today we still see a limited use of mobile devices."
- "I would recommend HANA to all those companies that need real-time data, such as retailers. In that case, it is worth the money."
- "In the midterm, we see negative implications for Oracle and IBM as their database no longer will be needed."
- "There will be no change in the short term for both hardware and software vendors, a slight positive for producers that do the HANA box."
- "In a few years we can see Oracle selling fewer databases and HANA boxes substituting servers, but it will be a slow change."

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*Internal IT Architect & Consultant
Aerospace & Defense Company*

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Aerospace & Defense Company*

SAP AG's HANA Data Analysis Platform

► Director of bank applications for a large European bank

The bank did not follow through on a plan to pilot HANA because SAP was busy in December and January, giving Oracle time to fix a bug in its database. Budgets have tightened, making the HANA pilot a near-term uncertainty. Speed and faster report processing are HANA's greatest advantages, but these do not warrant the cost for some tasks. Oracle will compete with HANA for the same customers.

- "We were going to implement a pilot to solve a bottleneck in Oracle's database, but SAP people were busy closing the year in December, then busy doing kickoffs in January. Meanwhile, our Oracle team has fixed the bottleneck so ... HANA is less urgent now."
- "We don't know timing yet as we don't know when we will get the budget for HANA. Right now our budget is limited and it will be hard to convince our CFO to give us extra budget, but we are trying."
- "The biggest advantage is time. Reports that took hours are done within seconds, and the ones who took days, minutes."
- "HANA's cost is a minus; it is not inexpensive."
- "It is not so badly needed for procurement or ERP. For data warehouse and reporting, it is important. Reducing Oracle database costs is a plus."
- "Right now we would not run our system on HANA because we don't need the rapidity everywhere; we don't need to know our procurement accounting so quickly. Also, components are not ready yet. For example, the new BW [[Business Warehouse](#)] interface is still in a beta release."
- "Another problem is that SAP is not seen as an innovative vendor, and people don't think about SAP when they think mobile, cloud, business intelligence accelerators. It is harder for SAP to sell."
- "We would try to eliminate Oracle, which also is SAP's plan. It could be interesting from a TCO point of view."
- "There will be no change to hardware and software vendors in the short term, but you can imagine some changes in the server area."

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*Director of Bank Applications
Large European Bank*

► Global IT manager for an automotive industry supplier

This company has decided against a HANA pilot for now because of viable alternative solutions and HANA's high price. The source is focused on getting other infrastructure pieces in place with SAP; then he will revisit piloting HANA but not for at least two years. HANA is best for big companies with big data and big budgets. Not all companies need the speed HANA provides, making the cost the biggest deterrent.

- "We have talked to SAP about [HANA], but we don't feel it is the right time now."
- "We are working on our infrastructure. Our No. 1 priority right now is to standardize our system on SAP, then to implement BI tools. ... We would need to have a budget that we don't have right now."
- "HANA is good for large companies to analyze a big volume of data. For example, a top automotive company might need to know what is happening in all the shops and have real-time data warehouse management."
- "We are willing to study the possibility [of HANA] in two years when all our migration is done and our BI tools are in place."
- "I'd recommend HANA only to large companies with big-data volume and the budget for it. I hear from some of my clients that they need to have more data and more information in general in a shorter time. I've also heard from large banks a similar need. ... For the smaller companies outside the Fortune 1000, it is less of an issue."
- "A smaller company like us is a different matter. Not everybody needs that speed, and there are other tools that give us a good response in a reasonable time. We have some internal tools that are not so bad, so HANA is not a top priority for now. Finding the budget too is going to be hard. There has to be a strong business case, or our CFO will not cooperate."
- "Applications will have to be compatible with in-memory technology, which is not the case. In the future I would expect SAP and others to release plenty of applications outside of data warehousing."
- "In the near term, I do not expect changes for hardware and software vendors, but there might be a small bump for producers of HANA's box."

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*Global IT Manager
Automotive Industry Supplier*

SAP AG's HANA Data Analysis Platform

► Head of IT services for a French media company

As an Oracle client, this source has not implemented SAP's HANA, but he remains intrigued by the technology as a way to diversify vendors. He is looking to move away from having a single vendor like Oracle, which is why he chose not to implement Oracle's Exadata.

- "We did not implement HANA, and we are not going to as we are all Oracle. However, we are interested in the technology as we are looking into diversifying our technology providers."
- "We also have not implemented Exadata. We had looked at it a year ago, and we decided not to go with one vendor for everything. Vendors right now try to sell us everything, but ... we would have no leverage."
- "It is like buying all software consulting and hardware from IBM. They say it is more efficient and we save on costs. So far, we have noticed that in bids it does not work. You could have different Oracle resellers against each other, but discounts don't go far. This applies to everything. Once you are an all-Oracle shop, how can you have them discount the products? Now on hardware at least we can put two different vendors against each other, and there is a real bid."

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*Head of IT Services
French Media Company*

► IT architect for an aerospace company

This company is not working with HANA because it is "several technical generations" behind in data requirements. The source reviewed a proposal for a similar yet simpler system several years ago but did not have the budget to support such an investment. In all the material he recently has seen for improving business processes, he has not heard from SAP regarding HANA.

- "I don't have any experience or background with SAP HANA. It looks like an interesting technology. Our business intelligence/data mining requirements are several technical generations, maybe even a decade, behind this."
- "We reviewed a similar but more basic system developed by an internal research and technology group a few years ago. At that time the economic climate was one of great uncertainty, and the group could not get funds to capitalize their product based on the lack of perceived benefit at that time. The people who reviewed the project agreed it had fantastic potential, but management was not inspired enough to commit any dollars to it. Capital budgets are still tight, and I haven't seen the project come back for a second round."
- "I have reviewed several proposed business intelligence projects recently, but I haven't seen any designs or proposals for HANA."

Secondary Sources

These five secondary sources offered information on HANA's benefits, innovation and threat to Oracle, as well as on the trend toward in-memory databases.

► Feb. 27 Information Week [article](#)

Oracle introduced its own in-memory database in response to SAP's HANA and in a move deemed better late than never.

- "Oracle joined the in-memory analysis movement at long last Monday with the release of the Oracle Exalytics In-Memory Machine, an appliance combination of hardware and software aimed at delivering sub-second response times for data-intensive business intelligence (BI) and performance management applications."
- "Oracle Exalytics is the second major new appliance introduced by Oracle in as many months, with the first being the [Oracle Big Data Appliance](#). But where the first product arrived early in the movement toward big-data analysis, Oracle Exalytics is a latecomer to the in-memory analysis trend."
- "Upstarts like Applix (now a part of IBM Cognos), QlikTech, and Spotfire (now a part of Tibco) started answering user calls for faster data

More recently, SAP has morphed years of in-memory product development into Hana, an in-memory platform that is evolving to displace the analytical and transactional databases that are Oracle's bread and butter.

Information Week Article

SAP AG's HANA Data Analysis Platform

analysis and what-if scenario planning more than half a decade ago. More recently, SAP has morphed years of in-memory product development into Hana, an in-memory platform that is evolving to displace the analytical and transactional databases that are Oracle's bread and butter."

- "Late may, indeed, be better than never for Oracle, as plenty of customers have yet to add in-memory analysis capabilities. Still other customers may wish to consolidate, ditching aging in-memory products and standardizing on Oracle. That move would make good economic sense if customers are already deeply invested in related Oracle products including the Exadata Database Machine, Oracle Business Intelligence Enterprise Edition (OBIEE) middleware, and Oracle BI Applications."
- "At the heart of the Exalytics appliance is Oracle TimesTen In-Memory Database Release 2, introduced last month with upgrades to support 'adaptive caching' in conjunction with the Exalytics appliance. This caching capability monitors workloads generated by various OBIEE-powered dashboards, queries, and analytic applications and automatically moves the data that is most in demand into the memory of the Exalytics appliance. The result is 10- to 100-times faster reporting and dashboard performance and up to 79-times faster multidimensional (OLAP) performance compared to Oracle deployments without Exalytics, according to Oracle."
- "For customers already using Exadata and OBIEE (six- to seven-figure purchases each), adding Exalytics seems like a shoe-in—an incremental add-on expense with plenty of performance benefits. But for those not already wedded to Exadata or OBIEE, Exalytics may seem like an all-or-nothing alternative. Another case of all-red-stack commitment that heterogeneous IT shops may not be inclined to make."

► Nov. 22, 2011, Bluefin Solutions [blog entry](#)

The blogger summarized HANA's technological innovations and provided answers to several key questions about the platform.

- "HANA 1.0 as an appliance is effectively a database and analytics appliance. You can load data in one of three different ways, from just about any location—in real time, or in batch, from SAP and non-SAP data-sources."
- "HANA is well on its way to becoming a general purpose database."
- "Expect the first non-analytics product running on the SAP HANA database platform to be the small-business oriented SAP Business One—a version of SAP's ERP platform designed for businesses with 1-100 employees."
- "The best thing that HANA brings to the table is the ability to aggregate large data volumes in near real-time—and to have the data updated in near real-time. SAP's demos show hundreds of billions of records of data being aggregated in a matter of seconds. SAP has built a set of Analytics Apps on top of HANA and this are set to be great point use cases to get customers up and running quickly."
- "In addition, SAP NetWeaver BW 7.3, powered by SAP HANA looks like it will be a no-brainer for the majority of SAP's 14,000 BW customers. The improvements in performance and flexibility it allows resolve many of the classic data warehouse problems that have plagued the market for 20 years."
- "SAP HANA improves the biggest bottleneck that exists in standard database platforms—the spinning disks. In-memory technology is typically 100-1000x faster than disk for this reason. However in-memory technology does not always calculate any faster than existing technologies, especially since some analytics engines out there have a lead on maturity."
- "Once the Business Suite runs on IMDB, Oracle won't be needed any more by SAP customers who purchase HANA. This doesn't affect anything in the short term because many of those people buying HANA today will still need an Oracle ERP system."

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Bluefin Solutions Blog Entry

► Enterprise Irregulars June 25, 2011, [blog](#) about HANA, and the blogger's responses to readers' questions

Industry blogger Dennis Moore offered several insights and technical details on the HANA technology and some implications for other software and database vendors.

- "After HANA gets in the door, I'm sure the CIO will find tons of additional uses for it. This is huge, and will generate truckloads of money for SAP, while also making customers super-satisfied."

SAP AG's HANA Data Analysis Platform

- “Larry wants to sell you Exalogic and Exadata machines, costing millions; Hasso wants to sell you a simple, low-end, commodity device delivering the same benefits.”
 - “Larry wants to sell you a cloud in a box; SAP will sell you apps on the cloud, or analytics in a box for hundreds or a thousand times lower cost than Oracle’s solution.”
 - “In the long run, SAP HANA may indeed revolutionize enterprise business applications, but that remains to be seen. Right now, SAP HANA should be capable of creating substantial customer benefits—and generating a very large revenue stream to SAP.”
 - [June 28](#): “In-memory databases have index structures optimized to reduce computational time, and these index structures are significantly faster for accessing memory in data than traditional database indices.”
 - [June 30](#): “HANA is not just technology, it’s also the potential for a transformational user experience. When you reduce the time for a query to complete and return an answer by one or two orders of magnitude, users now not only have the ability to solve business problems faster and better. In addition, users (and applications) can include far more data analysis in activities that generate business value. An analysis that takes a second rather than two minutes can now become part of a call center agent’s script. An analysis that takes three seconds rather than a minute can run during a travel planning session. An analysis that takes a tenth of a second rather than ten seconds can be run during a car crash (whereas the ten second analysis could not). HANA can be the difference between having a software application that works well for users in scenarios where no software application could have worked before.”
 - [Aug. 5](#): “Maintaining a big Oracle BI data warehouse (or IBM, or Microsoft) costs a lot in terms of the database license, hardware costs, and DBAs. And, at the end, the users get slow results. Just in terms of costs, for many customers with large data warehouses, HANA can pay for itself in the first year just based on savings.”
 - [Dec. 15](#): “In some sense, a comparison between SAP HANA and Oracle Exadata *is* unfair, but that is because Oracle Exadata provides much lower ROI. However, Oracle will generally pitch Exadata into accounts that say they want better database performance, SAP certification of any kind, and TCO reduction due to landscape simplification—and that is exactly where SAP will position SAP HANA. These products, while dissimilar in many ways, are direct competitors in many situations.”
 - [Feb. 7](#): “If SAP executes fully on its HANA roadmap, I suppose they would hope to become the number 2 database company in the world very soon. Certainly, if HANA delivers on SAP’s ambitions, it could have a substantial, negative impact on competing database products, most notably Oracle (which has a large presence in SAP accounts). Other database vendors, especially those focused on high performance analytics, would also see a reduction in demand in SAP accounts. Those that offer similar benefits to SAP HANA might see an upswing in demand elsewhere.”
 - “Teradata would see some impact for sure, but HANA’s suitability for Big Data analysis is not yet proven, so the extent of the impact could range from almost nothing to significant (especially in SAP environments). The probability is high, however, that SAP’s focus and most obtainable market would be in its installed base in applications favoring data exclusively from SAP, and that is probably not a major market segment for Teradata, so the short-term impact on Teradata is probably not that severe. However, it is likely that every Teradata rep is being asked ‘what about SAP HANA’ in their accounts right now; if Teradata has not developed a good answer for that, or if their sales staff has not learned that response, SAP HANA could have an impact on sales cycles (making them longer) and average selling price (ASP, making it lower) even without being technically suited as a competitor.”
- **Dec. 13, 2011, IT Business Edge blog [entry](#)**
In-memory computing, such as provided by HANA, was hailed as the future of enterprise computing. However, the adoption timeline is difficult to predict.
- “It’s pretty clear at this point that the future of enterprise computing is going to be tied closely to in-memory computing as IT organizations look to simultaneously boost application performance while also dramatically

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Enterprise Irregulars blog

SAP AG's HANA Data Analysis Platform

[reducing the sheer volume of IT infrastructure that needs to be managed](#). What's not clear is just how long that journey just might take.”

➤ **Jan. 5 entry on the French blog [Censio](#)**

The author tested a “virtual HANA machine” and compared the results in completing the same requests through other databases. He downloaded data of commercial U.S. flights from 1988 to 2011, totaling 48 Gigabytes and 140 million lines. The compression rate went from 48 GB to 7 GB when using HANA—six times faster than [MySQL](#) but 20 times slower than [MonetDB](#).

Next Steps

Blueshift's next report on HANA will follow the arrival and timeliness of SAP's additional applications for the platform. We also will assess the implications for middleware companies Tibco, Informatica and [MicroStrategy Inc. \(MSTR\)](#), which could benefit by making connectors to bridge HANA with the applications. We will determine HANA's ongoing effects on the need for databases and servers and on competitors, particularly Oracle which recently announced its own in-memory database appliance, Exalytics. Finally, we will follow up on HANA's applicability within the mobile and social network industries.

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