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SAP Business One – Simple, Affordable, Productive ERP for SMBs?

White Paper

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Why You Need to Read This

This paper is intended to supply CEOs and CIOs with the information needed to critically assess their future investments in SAP Business One.

SAP has been successful with its high end enterprise application software. However, SAP has been trying to replicate this success in the lower end ERP market for more than 10 years with mixed achievement. The first attempts all focused on solving this task by repackaging the R/3 suite of products. The results, today visible in the form of mySAP All-in-One, were less than convincing: ease of use and simplicity were not more than a thin layer of marketing veneer. As soon as customers were demanding more sophisticated functions, they lapsed back to the complex enterprise product they had been trying to avoid.

Conscious of this apparent impossibility to scale the enterprise product to the needs of SMBs, SAP sought a much different solution that was bred from very different architectural stock. To a large extent, this move was motivated by Microsoft's ability to successfully deploy its Navision (now Micorsoft Dynamics[™] NAV) solution in enterprises using SAP R/3 as a corporate hub. If Microsoft® was successful with a different architecture, why should SAP not try diverting from its own architectural paradigm? With NetWeaver promising almost unlimited and universal integration possibilities and R/3 (also known as mySAP) needing a remake anyway – why not leave the trodden paths and try something refreshingly new?

In this paper, we analyze the main architecture of Business One, the consequences for key features such as scalability and adaptability for users and partners, the future of the product, and the background that future developments will occur against. This background is formed mainly by SAP having to redo its whole product set in the next five years. SAP needs to reinvent its business and address its two most critical issues: *1) free customers from their current cost and complexity and 2) deliver a new architecture to carry them into the future.*

SAP is restructuring its product set around a new service oriented architecture based on NetWeaver. This will finally also affect Business One, although SAP's main focus for this product continues to be the removal of the key functional deficiencies. NetWeaver and Enterprise Service Architecture are, if at all, topics for the more distant future of Business One.

With the announcement of Business One at CeBit 2002, SAP admitted tacitly that the architectural heritage of R/3 is more of a burden than an advantage when it comes to creating an ERP offering for the SMB market. Here, we shed some light on how SAP's Business One addresses the need for simple, affordable, and productive ERP capabilities for the SMB market. We will also discuss how SAP Business One fits into the SAP family of ERP products and how upgrades to mySAP might work.

Expectations

When the leading vendor of enterprise applications launches a new product, customers and partners expect leading quality.

Architecture

Customers expect an architecture that is good enough for at least a decade, allowing them to amortize their investments and to embrace and leverage upcoming technologies and trends.

User friendliness

SMB users cannot invest heavily into end user training. The classic SAP product line always was subject to criticism in this area. Users expect that it will be significantly easier to work with an entry level product.

Functionality

With the R/3 and mySAP products, SAP more often than not leads the competition in functionality by a significant margin. Customers and partners expect to have a similar situation when SAP launches an SMB product.

Integration

Customers and partners expect better than average integration with SAP's other products and popular third party products as well as legacy and custom programs.

Longevity

From a vendor like SAP, customers expect a predictable product cycle, transparent roadmaps and standard maintenance for at least five years.

Quality

Over decades, SAP has built an image of a quality software vendor by providing the corporate world with dependable products.

Investment protection

Customers and partners alike want to be able to use their investments in the product for as long as possible. When the vendor improves and upgrades the product, customers and partners want to be minimally affected and, if unavoidable, be able to easily locate any areas requiring adaptation.

Upgrade path

SAP customers expect to be able to upgrade easily within SAP's product portfolio.

In this research, we will analyze to what extent Business One delivers on these customer expectations.

SAP Business One – The Architecture

The architecture of Business One is the classical, proverbial fat client architecture. This architecture uses the presentation server (or client) to run the application logic and relies on a shared database server for data storage.

The original idea behind this concept was to use the processing power available on the client personal computers (PCs). With PC processing power being consistently cheaper than server MIPS and clients typically running at 5% CPU utilization or lower, this concept appeared to be very tempting when it came out more than 10 years ago.

A number of vendors embarked on this concept, and some are still using it today. SAP, however, decided to opt for a different architecture in the early 1990s when it laid the ground for its successful R/3 product suite. The two-tier architecture was discarded for a number of good reasons:

When the number of users exceeds 100, performance begins to deteriorate. This limitation is a result of the server maintaining a connection via "keep-alive" messages with each client, even when no work is being done.¹

A second limitation of the two-tier architecture is that implementation of processing management services using vendor proprietary database procedures restricts flexibility and choice of DBMS for applications.²

Current implementations of the two tier architecture provide limited flexibility in moving (repartitioning) program functionality from one server to another without manually regenerating procedural code.³

The two-tier client server architecture is not well suited to balance load and memory requirements between users. This results in over-configuration because

¹ See Carnegie Mellon University http://www.sei.cmu.edu/str/descriptions/clientserver_body.html

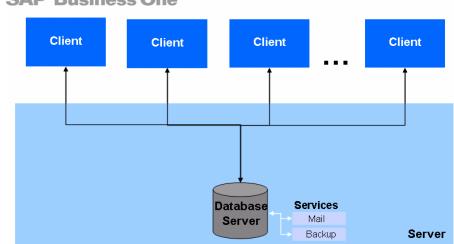
² Ibid.

³ Ibid. See also Schussel, George. "Client/Server Past, Present, and Future" and Edelstein, Herb. "Unraveling Client/Server Architecture."

you cannot "steal" idle capacity from other clients. In a shared application server environment, the operating system would provide mechanisms for load balancing.

Similarly, all reconfiguration possibilities available in modern cluster architecture are absent in the application part of the two-tier architecture. They are simply too expensive for client PCs.

Different from servers, client PCs cannot be utilized on high CPU-load levels. The client is primarily a user interaction device, and users quickly get angry about "sticky" keyboards – a feeling that quickly arises when clients are used at load levels above 30%. Hence, the speculation on "cheap MIPS" is largely an illusion.



SAP[®] Business One

• Figure 1 Business One uses a fat client architecture (Source: SAP)

Worse, there are real architectural penalties. Since the application has to run on each client, it has to be either installed and maintained de-centrally or it must be distributed centrally. Ideally, it would be dynamically invoked from the common database server, but that limits the amount of code that can be loaded. To some part, this can be overcome with sophisticated caching algorithms, but they are rarely used.

Fat clients and the Internet do not go together very well. The application code on the fat client cannot be distributed over the Internet, and the presentation part of the application is usually too intertwined with the application to allow it to be split off: Citrix has made a business out of this calamity. Users can install Citrix terminal servers or similar functionality from Tarantella to get almost any non-Internet compatible software to be used over the Internet. This, however, means to introduce another architectural layer in a rather inefficient way. Hence, such solutions are rather justified when it comes to enabling legacy applications for the Internet. In a modern product, they have no place. In a time when Software as a Service (SaaS) is starting to appear on the agenda, fat clients are an anachronism.

Administrating fat clients is more difficult and laborious. They need frequent upgrade, s and they are more vulnerable in terms of security.

All this made SAP refrain from using the two-tier client/server architecture. Ultimately, even PeopleSoft had to re-architect its whole application suite in admission that the two-tier approach was not scaleable enough. Many will recall PeopleSoft CEO Craig Conway's slogan "No code on the client" when he finally announced the re-architected PeopleSoft 8.

With all this, it should have been clear for a mature vendor like SAP that the twotier client/server is not the right architecture. When SAP announced Business One, the surprise could not have been greater when it became clear that Business One had a two-tier client/server architecture.

Even within the obvious limitations of the two-tier architecture, Business One appears to be restricted. At this writing, only a 32-bit architecture is supported and, after initially relying on Microsoft SQL Server alone, database support has been extended to IBM DB2 Express and Sybase. Linux is only available for the database server in the south-east Asia market. On demand offerings, gaining in popularity, are costly to implement as they require additional hardware. The scalability limitations do not allow for large, cost-effective implementations.

There are, however, architectural issues well beyond client/server. Throughout the middleware and application software industry, Service Oriented Architecture (or, as SAP calls it, Enterprise Service Architecture) has become a new paradigm.

Service Oriented Architecture (SOA) can decouple and integrate software services through its standardized interfaces, making the details of their respective implementation (at least in theory) irrelevant. Thus, SOA can contribute to the flexible creation of heterogeneous application landscapes. However, applications need to be structured as complete and stand-alone services that are clearly defined and can operate independently of the status and the context of other services. Business One can use some of the basic constructs of SOA, largely, because it can leverage Microsoft's .NET architecture. This allows programmers to integrate Business One using SOA constructs the same way as it is possible with thousands of other applications. Inside Business One, there is really nothing that makes it SOA or ESA compliant. This is the second major inconsistency in SAP's architectural blueprint for Business One.

User Friendliness

SAP was intrigued by the simplicity and the user interface of the original Top Manage software, as Business One was called originally by Top Manage (previously Menachel), the company that developed Business One. Top Manage was owned by Reuben Agassi, father of Shai Agassi. Shai Agassi is a member of SAP's executive board.

Top Manage had sold a few hundred copies of the product in countries including Brazil, Poland and Israel and did not have the full range of languages and regulatory support features required at the time of the \$10 million (USD) transaction.

Today, after many changes to the product, users are more critical about the user interface of Business One. While they largely agree that it is less complex than the R/3 or mySAP GUIs, they criticize a number of enhancements that SAP made to the usability of Business One. For a product that is sold as being extremely user friendly, some of these enhancements are quite surprising since they have been standard on many competing products. Such enhancements included:

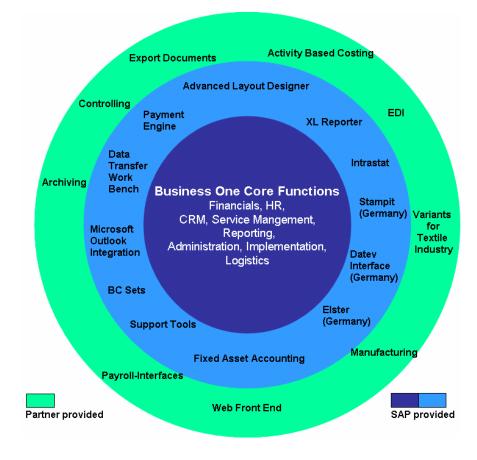
- Adapting font sizes on screens
- Including print preview capabilities
- Replacing cryptic error messages with informative and actionable hints
- Including tabs into the screen style guides
- Providing integrated tool tips a form of improved help facility
- Providing simple and consistent terminology

The key feature that intrigued SAP (so much so that it bought both TopTier and TopManage) is the "Drag-and-Relate" feature that allows users to dynamically

visualize database relationships between Business One objects. This feature has been much less of a silver bullet for usability than expected. Although patented, there are, at least from the point of the end-user, comparable functions to be found with competing products. The above list of recent changes to Business One (Edition 2005) also indicates that users require a lot more than Drag-and-Relate when it comes to usability. In this regard, SAP is in "catch up" mode, and the topic will require more investments.

Functionality

Business One was designed having the concept of extensions by partners in mind. In older versions, partners, customers, and even the vendor field organization would modify the application source code, frequently creating severe upgrade issues when migration to later versions was required.



• Figure 2 Core functions, SAP supplied extensions, partner add-ons (as of 10/2005, later additions possible)

SAP tried to avoid this by separating the product into a core and extensions. SAP strictly limits access to the core source code to its own Business One development facilities.

Everybody outside of the Business One core development facilities (that also includes SAP parts that are not directly related to Business One core development) is forced to use the Business One SDK. The SDK has limited and well defined access to the Business One functions. It is separated into three parts:

- 1. The user interface tool kit executing on the client
- 2. The data interface tool kit executing on the server
- 3. The integration toolkit (now superseded by Business One Integration)

While this gives the core developers some freedom to enhance their code without too many considerations about hidden compatibility requirements, this strategy has severe limitations. It limits the room for creativity for partners, and it has been found to be painfully slow. The Business One SDK is not a suitable vehicle for integrating throughput and data intensive solutions. Projects where this was attempted, including the Intersport Retail project,, failed.⁴ Customers and partners attempting to integrate data intensive extensions sometimes relied on direct database access, thus bypassing the SDK. While this indeed can significantly increase performance, it creates incalculable risks when upgrading to a newer release or adding database fields.

The SDK and the associated philosophy of tightly guarding the source code of the core are fundamental limitations when it comes to extending Business One. In a world that is heading toward a Service Oriented Architecture (SOA), there are clearly more modern and less limiting concepts for functional extensions. With SAP itself selling its own version of SOA, called ESA, we fail to understand why SAP has settled for a mediocre extension concept for a product that is in bitter need of it. Business One is intended to be extended by many partners and to be

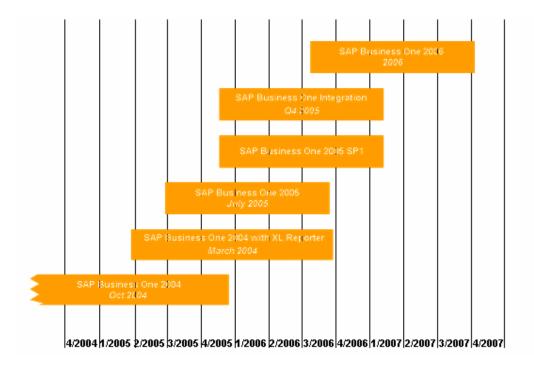
⁴ SAP has reimbursed the customer for his down payment and attempts now to solve the customer's requirements with All-in-One, a product that has not even been integrated into SAP's NetWeaver strategy. SAP has communicated that All in One will be subject to a major overhaul with projected availability late in 2006. We, however, remain skeptic about this timing.

deployed often in distributed hub and spoke environments. In both areas, SOA is a must for modern products.

When Business One was first released, it had significant functional deficits. In Release 6.0, released in 2002, there was no support for manufacturing, restricted multi currency support, bank payment support was restricted to support of the interface of the Israeli Bank Hapoalim, and business partners could only have one bank account. While this list is by no means exhaustive, it serves well to illustrate the nature of the initial functional deficits of Business One.

SAP has made huge investments (we estimate that the total investment into Business One has exceeded \notin 100 Million by mid-2005) to overcome functional deficits.

Key areas addressed to date include:



[•] Figure 3 Business One roadmap (Source: SAP)

Support for additional languages. In 2002, Business One only supported regulatory support for a few countries. In 2003, Business One grew to address the needs of Austria, Cyprus, Denmark, Finland, Germany, Israel, Netherlands, Norway, Panama, Poland, Singapore, Switzerland, and the United States of America. In Business One 2005, SAP now supports many additional countries:

Australia, Belgium, Canada, Chile, China, Costa Rica, Czech Republic, France, Guatemala, Hungary, Irish Republic, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Puerto Rico, Russia, Slovakia, South Africa, South Korea, Spain, Sweden, and the United Kingdom.

Even now, the multi-language support is not on a level that users had on R/3. There are restrictions in combining languages on the same machine (e.g. English and Chinese cannot be combined). Additionally, there are no country versions for India, Pakistan, or for Arab-speaking countries.⁵

While this shows SAP's determination to rapidly turn Business One into a global product (which it was not at all five years ago), we expect that it will take additional years to perfect this support and to make it stable and reliable.

Payment engine

Originally developed by Steeb, a midmarket specialist wholly owned by SAP, the payment engine overcame most of the initial severe banking limitations of Business One. After Steeb was forced out of the Business One market due to a lack of profitability, SAP took over further development of the payment engine in its Shanghai laboratories.

Manufacturing

Several partners such as SoftBrands (FourthShift and Demand Stream for discrete manufacturers) and Softguide (BB.One) as well as W_Concept (EasyPlan) are supplying extensions. Straton provides an extension for variant planning in the textile industry. However, we believe that the limitations of the SDK do not allow for high load and tight integration scenarios.

Retail

Although Steeb put significant resources into Retail One, it never came out. It was initially built for Intersport, but due to architecturally imposed performance

⁵ Although Arab is also an official language in Israel, we do not count Israel as an Arab speaking country in this context.

problems, the project was considered to be too demanding for Business One. SAP is still in search for a suitable solution for the retail market.

Outlook Integration

SAP put significant effort into Microsoft Office Outlook® 2003 integration. Demonstrations look nice, but customers still complain about speed and the level of calendar integration.

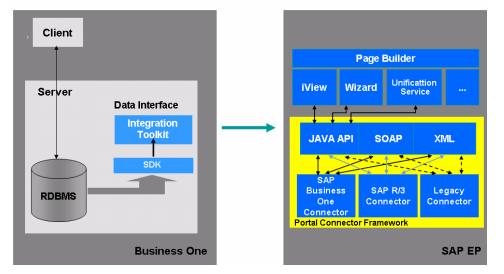
Multi-language support limited

Multi-language support is still limited. It is currently not possible to have languages such as German, English, and Chinese on the same system.

Integration

Most users would quite rightfully expect that SAP can integrate its products better than any other vendor and that this integration is, wherever possible, uniform. At any rate, it should be pre-configured and easy to implement.

When SAP released Business One, it did not meet any of the above expectations. In fact, Business One did not integrate better with R/3 or mySAP than, for example, Siebel or Microsoft DynamicsTM NAV. Integration was achieved on three levels:



Connecting Business One to SAP EP

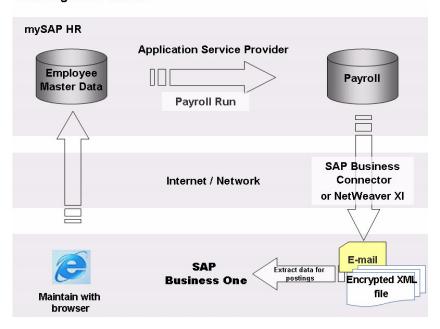
• Figure 4 Business One integration with the SAP Enterprise Portal: no particular advantage (Source: SAP)

User Interface

You can integrate Business One with the other SAP products using a portal. SAP, of course, recommends its Enterprise Portal which is part of NetWeaver. However, any other portal will do the trick unless you need an iView, which only executes on SAP's EP because it is proprietary portlet architecture. Any other software can be integrated the same way. Business One has no real edge here.

Data

You can feed data into the SAP Business Warehouse (BW). SAP BW will gladly accept data from any other application such as Microsoft Dynamics[™] or any of the Oracle business application products. Again, you could also use other data warehouses from competing vendors – they all integrate well.



HR Integration Toolkit

• Figure 5 Payroll service integration for Business One: no edge over competition (Source: SAP)

Processes

Business One uses SOAP and XML to transfer data into SAP XI (previously the SAP Business Connector). This is nothing that could not be purchased from other vendors, too.

Ideally, Business One and mySAP would share many concepts. The data and the process models would be similar, development and administration would follow

the same principles. If this were the case, then SAP would have created a product that really has an edge over functionally in equivalent products from competitors.

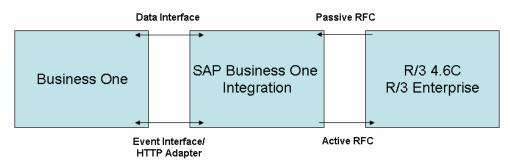
Since Business One does not provide payroll, integration with SAP HR is important. Most Business One installations have to integrate with service providers because running SAP HR is well above the scope of a typical SMB.

Here, SAP proposes to use the following integration scenario:

Again, there really is nothing special – any other ERP application can be integrated with mySAP HR the same way. Business One, of course, can be integrated with other, non-SAP, HR packages as well.

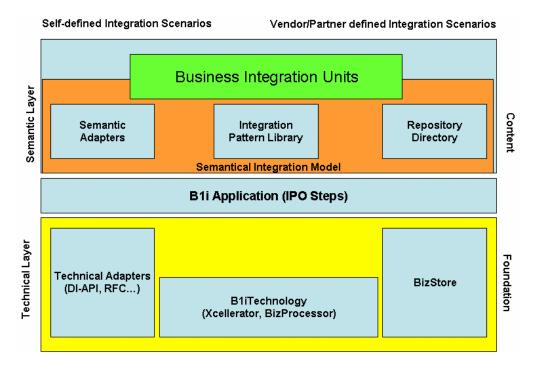
Very recently, SAP developed a much improved integration package for Business One called B1i. Initially developed in Germany, it now is being worked on in the SAP Shanghai labs to reduce cost, a much needed measure for a product that still is a heavy burden on SAP's financials.

B1i uses a very different technology (now called officially "SAP Business One integration for SAP NetWeaver 2005") that is not based on NetWeaver, as one might expect. Instead, it uses a model based integration technique that cleanly separates between technology and semantic aspects. Currently, it allows only integration scenarios between Business One and R/3 4.6C as well as R/3 Enterprise. Given the fact that it is a brand new product in early states, this gives an interesting insight. When it comes to selling Business One, SAP does not want to face other impediments like making customers upgrade to mySAP or having them install NetWeaver.



• Figure 6 Basic scheme of new Business One Integration (Source: SAP)

SAP Business One Integration can, of course, be used in other integration scenarios, once they are supported. Users and partners can define their own scenarios of choice. Currently, only six so called Business Integration Units covering the following areas are shipped:



• Figure 7 Business One Integration architecture (Source: SAP)

- 1. Purchase Order form B1 to R/3 Sales Order
- 2. R/3 customer to Business Partner in B1
- 3. R/3 Delivery to Goods Receipt in B1
- 4. R/3 Invoice to B1 Invoice
- 5. R/3 Product to an Item in B1

6. R/3 Sales Order to B1 Purchase Order

These Business Integration Units can also be used in combination. SAP's new Business One integration technology is currently in early release, and it is not well known within SAP. While it is a significant improvement, it also raises new doubts and questions as it parallels functions found in NetWeaver. Business One Integration uses different and more modern technology, and it relies on Open-Source Apache Tomcat as the http application server – is this the replacement for NetWeaver XI? Is it an admission that NetWeaver XI is too complex for hub and spoke scenarios?

The new Business Integration Units addressing individual integration scenarios are currently limited to the most frequently used SAP R/3 versions. Other applications, particularly non-SAP products, are not yet targeted, and there are no announcements to this end as of yet. While functionally part of integration orchestration complexes, SAP here again does not follow any standards. As of now, SAP Business One Integration can only act as a proprietary hub in a Business One to Business One/R/3-environment.

Longevity

SAP is following a five year mainstream maintenance practice for its mySAP range of products. Business One, however, has a much shorter maintenance schedule. Here, mainstream maintenance is only available for two years from customer release.⁶ This forces customers to upgrade at least every two years, and it may mean costly license upgrades like those customers experienced when upgrading from R/3 to mySAP. The requirement to upgrade every two years significantly reduces customers' ability to predict their costs of ownership.

SAP significantly deviates from standard industry practice as all other significant competitors offer much longer maintenance cycles.

⁶ More details can be found at <u>http://service.sap.com/smb/solutions</u> where you can find exhaustive material on SAP's release strategy.

Quality

Customers and partners consistently complain about the product quality of Business One. SAP has established a high quality level for its mainstream R/3 and mySAP products. Business One has not yet reached this level. Responsiveness of SAP's support is lacking, and customers complain of errors that have been waiting for a fix, in some cases, for more than a year. Some Business One partners are unreliable and do not pass bug reports on to SAP. Customers do not agree with SAP's positive customer satisfaction survey results; they perceive their situation as being much less glorious than the picture SAP paints.

To fix problems, SAP, like any other software vendor, issues patches. As the patch releases for Business One are frequent, many partners do not have enough capacity to scrutinize their add-ons against the patch levels. Frequently, they keep their customers at older patch levels to avoid upgrade efforts. Hence, many of the quality improvements have not yet made it to customers.

Investment Protection

Users and partners alike require investment protection. On the average, midmarket users change their ERP system every seven years. Users buying now want to have until 2013 to amortize their investment.

Midmarket users are primarily interested in functionality. The software must support their business and if possible, do so straight out of the box. For them, a mature, function rich, and easy to implement system with low costs of ownership often is preferable over a "young and sexy" yet functionally immature product as it is subject to many changes as it grows up. Changes are good for users who receive them in time and can use them immediately. Other customers are burdened with migration costs without profiting from these changes.

When partners decide to sell Business One and to provide extensions for it, they enter an even stronger dependency. They invest in infrastructure, marketing, training, and software development. First and foremost, they seek to profit from SAP's branding.

While low functionality offers genuine opportunities for partners filling the gaps, it also poses risks. Over time, SAP may (as proven with R/3) elect to endow the

product in its core and strengthen its competitive position with functions previously provided by partners. This may invalidate the partners' investments.

During SAP maturing and improving the product, partners may find themselves confronted with unplanned development efforts resulting from adapting their addons. While the basic Business One architecture protects SAP from code changes by partners and users, it does not shield partners and users from SAP's code changes completely. As in real life, puberty and adolescence are stressful times for both parents and children.

To date, SAP has not been able to sell Business One as often as it had planned. For many countries such as Switzerland or Germany, far less than half of the projected sales had happened by the end of 2005. Large Business One partners like T-Systems, Steeb (a fully owned subsidiary of SAP), and RedIT in Switzerland stopped the Business One partnership. Steeb once was planned as the German central Business One service hub. SAP transferred the approximately 50 Steeb customers and part of the staff to a small partner, Kirbis. RedIT became a Microsoft partner.

Given the developmental character of Business One and its architectural limitations, it does not seem likely that customers or partners can exploit a stable utilization and amortization period of seven years. When engaging on Business One, it rather appears to be advisable to allow for contingencies covering early depreciation.

Upgrade Path

SAP Business One is, apart from the SAP logo, incompatible with the mySAP range of products. It differs in:

- Look and feel
- Architecture
- Implementation language
- Data model
- Process model
- Functionality

- Development platform
- Software logistics

In short, it is a different product. It is as different as if it had come from an unrelated vendor–which, in fact, was initially the case. Yet, SAP is telling its customers and prospects that there is an upgrade path to the mySAP line of products. How is this going to work?

The approach is based on SAP's vision that users should manage their applications purely on a process level, making the application software products and their implementation details largely irrelevant. Processes that are implemented in a service oriented architecture are called on by SAP Enterprise Services.

SAP, aided by IDS Scheer, is building an Enterprise Services Repository. Currently, this repository, while not yet released, is embracing only services built on the mySAP Business Process Platform which is neither able to accommodate Business One nor All in One.

The first SAP product to use the Business Process Platform and the Enterprise Services Repository will be "All in One S"⁷ which, per Henning Kagermann⁸, will be announced and available in the second half of 2006. Given the magnitude of this project, we have doubts about this date.

As of now, Business One is not even part of a similar endeavor. Notwithstanding, SAP presents the vision (see Figure 8) that all SAP applications will be enabled to be embraced by this repository. Today, it is totally unclear how and when SAP will have decomposed Business One into a set of services that can be individually configured. If SAP will succeed here, then it is likely to result into a product rearchitect with unknown compatibility.

⁷ In his CeBit press conference on March 9, 2006, SAP CEO Henning Kagermann used quotation marks when referring to the next major makeover of All in One, which today is still an R/3-based product. We see this as an indication that the name may not yet be final.

⁸ Press conference CeBit 2006

In the interim, any migration from Business One to mySAP or All-in-One is technically like going to a different product from another vendor.

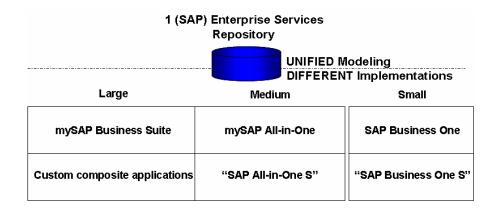


Figure 8 SAP's vision of application fusion using a proprietary Enterprise Services Repository (Source: SAP)

Bottom Line

Many of the problems and issues associated with Business One are reminiscent of the difficulties of other industries to enter a lower market tier. Daimler-Chrysler has ongoing difficulties with its Smart product unit, and premium airlines are still trying to figure out how to run their no-frills or discount brands. SAP's infrastructure is too expensive for a low-price product like Business One. The consulting rates that go with this product are too low to allow for experienced, high quality consultants.

SAP is trying its best to reduce costs. Transferring product development to lowcost countries is part of the equation. We doubt, however, that SAP will achieve shipment volumes that permit margins in excess of 30% as it has projected for its software in general. Looking at the numbers we have, we cannot see how SAP makes money with Business One.

SAP has tried many times to scale R/3 down. All attempts to mask the complexity and the resource requirements were unsuccessful. In its despair, SAP finally resorted to a product that architecturally was in straight violation of its previously expressed convictions.

SAP is selling Business One exclusively through its superb branding. Business One, had it come from a previously unknown vendor, would have had very limited

market impact. Many prospects who looked at SAP Business One, attracted by the SAP branding, have been disappointed and, seeing that they cannot combine a low-end R/3 with high-end functions and low-end economics, have started evaluating other vendors.

SAP may very well fix a good many of Business One's problems, albeit at high costs and further pushing out a break even point for its investment. Areas that cannot be fixed easily are the architecture, the incompatibility with its other products, and the economics.

Any attempt to address these areas will result in a new product and, hence, increased uncertainty for anybody engaging now on Business One. On the other hand, we do not feel that SAP has the luxury to ignore these issues. We would not be surprised to see SAP taking some radical steps two years from now; if and when SAP has proven that it can scale down a reworked All-in-One and comply with its own architectural master plan.

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Abbreviations

CPU	Central processing unit
DBMS	Database management system
MIPS	Million instructions per second
GUI	Graphical user interface
ESA	Enterprise service architecture (SAP)
SOA	Service-oriented architecture