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Internationalization of EU ICT Industries: The Case of SAP

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Summary: In Europe and worldwide the Internationalization of the information and communication technology has made enormous progress since the 1990s. Software firms are of particular importance for the dynamics of the digital world economy and the internationalization dynamics taking place globally. In this case study on SAP we consider the internationalization strategy of one of the world's leading software firms where one can identify a regional three-pillar strategy with a focus on the US, Europe and Asia. While Asia has gained relevance in terms of sales figures in the market one does not always find top-notch software development in that region, rather often intermediate digital inputs are generated which are then used in Europe and US software development. Occasionally pressure from host governments which can command large public procurement volumes seem to influence the international outsourcing strategy. SAP is a global market leader with long term growth opportunities which should be able to build on an international base of investors in stock markets.

Zusammenfassung: Die Internationalisierung der Informations- und Kommunikationstechnologie ist in Europa und weltweit seit den 90er Jahren erheblich fortgeschritten, wobei Software-Unternehmen eine besonders große Bedeutung für die Dynamik der digitalen Weltwirtschaft und die Internationalisierungsprozesse zukommt. Bei der Fallstudie zu SAP wird eins der führenden Software-Unternehmen in Europa und weltweit in seiner Internationalisierungsstrategie näher beleuchtet, wobei man eine Drei-Säulen-Strategie USA-Europa-Asien identifizieren kann. Während Asien als Markt an Bedeutung längerfristig gewinnt, ist die dort betriebene Software-Entwicklung nicht ohne weiteres an der Spitze der Wertschöpfungskette, sondern z.T. eine Art digitaler Vorleistung im Konzern – mit Weiterverarbeitung in den USA und Asien. Bisweilen scheint der Druck von Regierungen, die Aufträge vergeben können, auch die internationale Outsourcing-Strategie zu beeinflussen. SAP ist ein globaler Marktführer mit weiterem Expansionspotenzial, der auch eine internationale Anlegerschaft mobilisieren kann.

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1. Introduction

The ICT sector is a highly dynamic element of modern networked societies. Leading companies in the field of software development are located in the US, Asia and Europe. An innovative and successful company in the EU is SAP which has proven its ability to be successful as a globally active firm. The following case study is part of a broader research project conducted for the European Commission (MEIJERS/DACHS/WELFENS, 2007).

SAP was founded in 1972 in Walldorf, Germany and is a global leader in providing collaborative business solutions for all kinds of firms and all sectors. Five former IBM employees created the SAP GmbH. Their idea was to develop standard application software for real-time business processing. One year later, the first financial accounting software was complete, forming the basis in what later came to be known as the "R/1 system." After rapid growth SAP GmbH became SAP AG and started on the Frankfurt stock exchange in November 1988. SAP is listed on several exchanges, including the Frankfurt Stock Exchange and the New York Stock Exchange.

In the 1990s SAP R/3 was released. The client-server concept, uniform appearance of graphical interfaces, consistent use of relational databases, and the ability to run on computers from different vendors have been main characteristics. At the end of the 90s the mySAP.com strategy was launched, heralding the beginning of a new direction for the company and its product portfolio. mySAP.com links e-commerce solutions to existing ERP applications, using state-of-the-art Web technology. Today, based on Enterprise Services Architecture and the underlying integration and application platform, SAP NetWeaver, SAP provides solutions for end-to-end business processes.

Internationalization of Staff

SAP is the world largest inter-enterprise software company and the third-largest software supplier in the world economy. The most important subsidiary is SAP Americas.

Reflecting its success in business, SAP hired many highly qualified professionals over the course of 2004/2005. The actual number of employees hired exceeded this forecast because of the need to accelerate the development of the new generation of software and because of SAP's high level of success overall. A high share of revenues is coming out of Germany but SAP workforce is not representing this. SAP employed 35,873 people worldwide (2004: 32,205; 2003: 29,610), of whom 13,916 were located in Germany (2004: 13,525; 2003: 13,026).

The biggest increases were in research and development, in which – due to the development of SAP NetWeaver as Business Process Platform – the worldwide employee count rose 18% to 11,629 (2004: 9,882; 2003: 8,854). Service and support counted 14,390 employees at the end of 2005 – a growth of 7% (2004: 13,505; 2003: 12,533). Sales and marketing had 6,249 employees (2004: 5,583; 2003: 5,170). This is a rise of 12%. Finance and administration headcount increased 11% to 3,605 full-time positions (2004: 3,235; 2003: 3,053).

The largest number of employees (61%) work in the EMEA region. Twenty-two percent of employees are in the Americas region and 17% are in the Asia-Pacific region.

The percentage increases were 19% in the Americas, 5% in EMEA, and 27% in Asia-Pacific.

SAP employs people of 107 nationalities. The Company embraces this diversity as a valuable resource. To maximize the benefit, it adopted a global diversity management initiative, involving employees from all the regions as well as external advisers.

SAP Market Dynamics

SAP has 12 million users, 100,600 installations and 1,500 partners. The leading software package SAP-All-in-One has been sold in more than 50 countries and is used by 7,000 clients. SAP Business One is offered in 37 different country-specific versions and used by more than 9000 customers. SAP is the world's industry leader in the field of IT solutions for small and medium-sized firms; 30% of order inflow in 2005 was from SMEs, by 2010 a share of 40-45% is expected.

SAP has more than three decades of experience in modern IT service and software development; it delivers mySAP Business Suite as a key program which is considered as a powerful family of business solutions. SAP solutions are open and flexible, supporting databases, applications, operating systems and hardware from major vendors. SAP Business Suite creates digital opportunities for raising efficiency and innovativeness along the value-added chain in many sectors and in government.

As software can be applied the better the more standardized the building blocs in the value-added chain are and the better the production process is geared toward flexible adjustment and learning the increasing use of software in enterprises, including SMEs, stimulates productivity growth. Since SAP offers international solutions for multinational firms –both of small and large size– the SAP software product family stimulates the internationalization process. Through the facilitation of networking even small firms are able to enter international markets and the creation of powerful e-commerce platforms helps firms to enter new markets and cut transaction costs. Raising supply chain efficiency, creating stronger customer relationship and supporting internationalization of business as well as enhancing innovativeness are all elements which are vital for SAP. However, most firms need considerable training as a one-off start-up investment for optimally using SAP since many processes in firms are idiosyncratic and require specific adjustment programming on the side of SAP and its partners.

As regards enterprise software there are many small competitors and several medium-sized competitors of SAP. The SAP company offers firms switching to SAP solutions a special migration services; thus customers using PeopleSoft or JD Edwards IT solutions can rather easily migrate to SAP.

SAP Custom Development offers a broad range of IT services:

- SAP Custom Development Projects
- SAP Custom Development Strategic Planning
- SAP Custom Development Project Management
- SAP Custom Development Quality Assurance

- SAP Custom Development Risk Assessment
- SAP Custom Development Maintenance
- SAP Modification Clearing

Intelligent software allows to flexibly combine all elements of the value-added chain and in particular to enhance flexibility and quality while exploiting opportunities for national and international outsourcing.

The main rival of SAP is Oracle which has acquired PeopleSoft and J.D.Edwards. Analysts (SAL OPPENHEIM, 2005) expect that SAP could generate about 0.5 bill. in additional revenue by winning over Peoplesoft customers in the next few years; with the new product mySAP ERP available since spring 2005 SAP offers new options for customers to modernize IT – and SAP is expected to particularly growth in the US. Since US economic growth is higher than in Germany and the EU, respectively, it is natural to expect the share of sales in the US to increase.

2. International Expansion of SAP Activities

As of 2005 SAP had around 32,000 customers in over 120 countries and employed more than 35,000 people at sales and development locations in more than 50 countries in the Europe, Middle East, and Africa (EMEA), Americas, and Asia-Pacific regions. SAP thus is active in Europe (plus Africa) , North-America and Asia; in all three continents there are software development activities. Sales in Africa and Latin America as well as Australia also are noteworthy. SAP does not outsource any of its core functions; only certain services concerning marketing (design, layout, etc.), maintenance and repair of technical equipment or cleaning are outsourced to external agencies; off-shoring – that is involving SAP labs abroad – is a normal element of SAP internationalization strategy.

SAP is active in international markets and also is an important foreign investors in the industry. SAP's internationalization has gone trough four stages:

- Exports of IT services and services (late 1970s and 1980s)
- Internationalization of the company through internationalization of the staff (getting momentum in the 1980s)
- Setting up sales organizations abroad (in late 1980s and 1990s)
- Creating SAP labs – offshoring software development – in the US and India in the 1990s, followed by similar activities in Shanghai at the beginning of the 21st century.

In the mid-1980s SAP founded its first sales organization outside Germany, in Austria. Later subsidiaries in Denmark, Sweden, Italy, and the United States followed. SAP software is tailored to country-specific needs and industry-specific requirements. There are over 25 industry-specific business solutions, and more than 29,800 customers in 120

countries use SAP products. Total revenues in 2004 by region are: 24 % in Germany, 33 % in Europe (excluding Germany), Africa, Middle East, 11 % in Asia (including Japan), 25% in USA, 7% in other American regions. SAPs management sees future growth in the Asian market predominately.

The local offices merely serve as sales offices, which are selling SAP solutions and provide services (consulting, etc.) to the local customers and are acquiring new business partners. Any FDI has the goal to support SAPs exports to that country.

R&D Internationalization

Exceptions are the Research centers and the Labs which are spread all over the world. There are 4 European R&D Centers, located in Walldorf, Karlsruhe, Dresden, Sophia Antipolis (France), shortly there will be 2 other centers in Belfast and Darmstadt; a new center in Sofia is rapidly expanding. Outside of Europe, SAP has Research centers in Palo Alto, Montréal, Pretoria, and in Brisbane.

Of the employees working in R&D, 56% (2004: 62%; 2003: 68%) were employed in Germany in 2005, 20% (2004: 15%; 2003: 9%) are in the high-growth SAP development centers in China and India, and 24% (2004: 23%; 2003: 23%) are in SAP's other development locations.

As a global company, it is not feasible, efficient, or economically viable to conduct all activities in all countries or develop software in only one location. As such, it makes sense to consolidate certain activities regionally in a cost-effective location and distribute work intelligently according to talent, cost, and market needs.

SAP is located in many leading high-tech locations around the world. Currently, SAP has 10 development centers in: Germany (Walldorf and satellites); Sophia Antipolis, France; Bangalore, India; Ra'anana, Israel; Shanghai, China; Tokyo, Japan; Budapest, Hungary; Sofia, Bulgaria; Montréal, Canada; and the United States (Palo Alto and satellites).

Research activities are particularly supported at the Hasso Plattner Institute in Potsdam and at Palo Alto (California), partly in cooperation with Stanford University. Key activities are also in Bangalore, India and Shanghai, China which are crucial for SAP overall dynamics and for expansion in Asia in particular. In the 1970s and 1980s SAP was mainly active in Europe, however, in the 1990s SAP has created both a lab in the US (Palo Alto) and in India. This testifies to the internationalization of the SAP Company.

As customers of SAP enter foreign markets or embark upon international cooperation or become active as foreign investors SAP is supporting the internationalization process. With SAP already active in Europe, Asia and North America (and Latin America) the company is well positioned to enhance the internationalization of modern industry and services. In relatively new fields for software-based modernization – e.g. the health care or public administration – the company offers powerful software packages which are tailored to individual customer needs. SAP has not been equally successful in all sectors (e.g. in the 1990s SAP had some problems in the retail sector in the US), but the company stands for sustained growth and profitability as well as high reputation among analysts and customers.

SAP is a company with three major geographical centers, namely Europe, the US and Asia is shaped by internal competition: An important element of SAP's strategy is to emphasize:

- Competition of ideas and concepts so that the firm tries to hire highly-skilled personnel.
- Competition in IT services and software development means global competition. In 2005 SAP has generated about 80% of its revenues of € 8.5 bill. in international markets. In its home base in Walldorf there emerged a serious dispute about establishing a worker's council in 2005; while the overall majority was against this the minority of employees – using certain legal provisions – brought the case to the court and the management finally agreed in spring 2006 to establish a workers' council (WIRTSCHAFTSWOCHE, 2006).
- Competition within the company which creates a particularly strong competition between Walldorf, Palo Alto and Bangalore. As the US growth is higher than in Germany and since the US is the world's leading innovator in ICT – and has institutions and factor market rules facilitating expansion of IT firms (e.g. eager to use flexible working hours which in Germany might face restrictions through trade unions and legislation) – SAP increasingly could become more a US-type company; one should not rule out that with accelerated offshoring to the US and a rising role of US managers and stock owners SAP finally might shift its headquarter to the US.

In the period 2005-2010 SAP might transitorily reinforce its European character as EU eastern enlargement has created new business opportunities in Eastern Europe. However, the expansion dynamics in the EU are modest compared to the US and Asia.

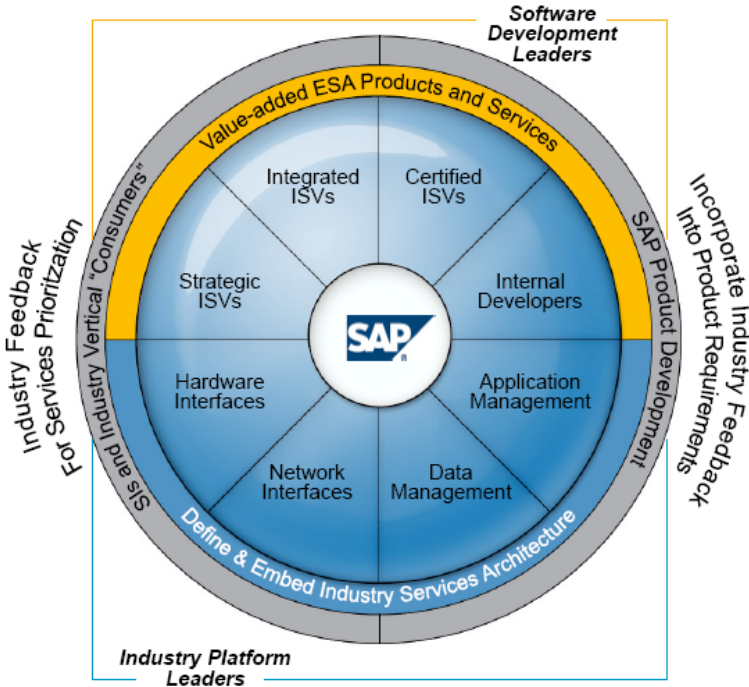
SAP outsources work to third parties where it makes sense and also sometime it is a business requirement to do so. Offshoring is getting important with the opening of Europe in regard to cheap labour resources and also it centralizes certain core processes (e.g. travel expenses, HR services can be done for a whole region out of one location at a cheaper cost).

SAP is the largest independent software developer itself (after Microsoft & Oracle). SAP has labs all over the world and tries to partner with other companies where SAP does not have a core competency or main focus. Co-innovation with partners and customers is part of the growth strategy. SAP has a unique partner ecosystem with more than 1,500 partners worldwide with overall more than 180,000 SAP partner certificates.

SAP Ecosystem Charter:

- Drive a sustainable, scalable Independent Software Vendor ecosystem
- Foster third party development strategic to the business process platform
- Broaden reach to developer community
- Assume a leadership position in driving enterprise services architecture for the industry

Figure 1: SAP Approach to Software Development



SAP Ecosystem Framework

The SAP Ecosystems are bringing together partners and customers from diverse industries to share ideas for and innovations in enterprise services, which provide the common business language that enables disparate software applications and infrastructure products to communicate. Because customers, partners and SAP are driving the standardization of enterprise services, they enable more plug-and-play between solutions built along the lines of those definitions, significantly reducing the cost of integration. These services enable companies to compose business processes that reach across IT system and company boundaries within an enterprise service-oriented architecture. The “Enterprise Services Community” provides the forum for defining enterprise services, while the Independent Software Vendor (IVN) provides the opportunity to work collaboratively with SAP on business solutions and process innovation and integration, leveraging enterprise services. The IVN further empowers customers to be active participants in the SAP ecosystem and key contributors to innovating new business processes relevant to their individual needs.

Co-innovation and open technologies enable customers to improve business processes, go to market faster and outthink and out-execute the competition. SAP operates in a highly dynamic and increasingly internationalized market where demand for intelligent software services for firms is growing.

3. Motives for Internationalisation

SAP is the world's leader in software development and IT services for medium-sized firms which SAP defines through the range of 10 to 2500 employees. With economic globalization stimulating internationalization of SMEs and particularly with eastern EU enlargement facilitating SME investment in accession countries it is obvious that SAP has enormous global market potential. Software development and R&D activities – narrowly defined – have grown strongly at the beginning of the 21st century as is evident from the rapid growth of employment in Germany: at the headquarter in Walldorf in particular.

In software development the US is the global leader – and also the largest OECD market - so that for SAP it was natural to finally set up a lab in California where activities have grown strongly in the late 1990s. Moreover, in India – the cheapest location of high-quality programming in the Anglo-Saxon world – SAP has become active in order to exploit cost advantages through international outsourcing and offshoring; with offshoring playing the dominant role. Moreover, India is a gateway to the whole Asian market, although it is clear that SAP will expand its activities in China.

As the enterprise software market naturally is shaped by strong long run price competition SAP has tried to combine software innovations with strict cost management which includes exploiting opportunities for international outsourcing and for offshoring. Clearly, as intellectual property rights in the software market are not very strong in the world economy offshoring has been a preferred strategy.

One may summarize the motives for internationalization as follows:

- Pressure to follow main customers in their internationalization (industry and services)
- Technology-sourcing, namely picking up innovations and new trends through presence in lead markets (US, EU)
- Creating and exploiting network effects: As more and more SMEs cooperate or are engaged in market-based transactions there are major network effects to be exploited; particularly as SAP is an industry leader
- Exploiting opportunities for cost reduction: By efficiently combining ideas and skills from the US, Europe and Asia the high-technology company SAP is able to benefit from the diversity of skills and concepts around the globe.
- With economic globalization continuing there are new opportunities for newcomers to enter growing intermediate product markets – in a mirror perspective that is there are new opportunities for outsourcing as emphasized by ONO (2000); this means that SAP also faces new opportunities as customer-supplier relations can optimally be structured only through modern IT services.
- If ICT expansion brings about a rising technological progress rate there also will emerge new outsourcing opportunities (BARTEL/LACH/SICHERMAN, 2005); again the leading software firm SAP may expect strong long run market growth in this context.

SAP is a driver of economic globalization through its impulses for creating digital international business networks. At the same time SAP stands to benefit from an ongoing economic globalization.

4. SAP Research and Innovation

SAP has major research and development activities in Germany and the US, but also in India where subsidiaries and partners are developing intermediate products for new software. Besides Walldorf and Potsdam in Germany the US SAP lab is a crucial center of innovative activity. SAP Labs U.S. is located in Palo Alto, CA, and was the first SP Lab established outside of Germany. SAP Labs U.S. has started with 25 employees in 1996; at the beginning of 2006 more than 1500 employees were working in Palo Alto. SAP thus can tap the pool of the human capital in Silicon Valley, create strategic partnerships in the US and more easily expand in the large US market. SAP Labs U.S. wants to create and deepen partner relationships that drive networked collective innovation. The SAP lab also builds an innovative community at various levels by getting involved in local business, cooperating with academic researchers and supporting specific projects and initiatives such as the 130,00-strong SAP Developer Network. According to SAP the Lab actively hires talents in North America, and often places people with strong industry-specific expertise in satellite offices that are located close to those industries; e.g. experts in government and public sector activities reside in Washington DC while experts in oil and gas work out of Dallas, Texas. SAP Lab u.S. has developed strategic relationships with various universities, including Stanford University, Carnegie Mellon, MIT, Rutgers University, Software Developer's Forum, Stanford Global Supply Chain Management Forum, Intel, Microsoft and others. SAP Labs U.S. has been a quite valuable asset in developing software innovations – it has contributed to the SAP NetWeaver platform and the Enterprise Service Architecture (ESA) framework.

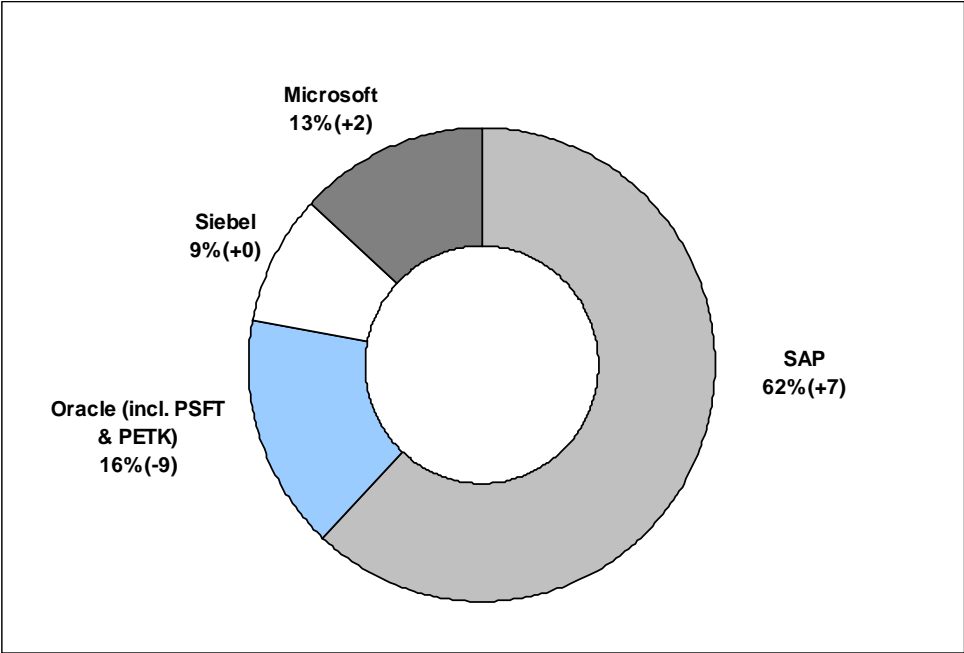
In 1998 SAP has created SAP Labs India which is one of the fastest growing SAP subsidiaries. The Labs India are considered as a crucial element of SAP's global development network. SAP Labs are role models for internationally distributed development organizations. In 2006 more than 2000 employees of SAP Labs India have contributed to the overall success of SAP.

5. Perspectives

SAP is a global player in enterprise software. Disregarding the very small SMEs it is fair to say that SAP indeed is a global leader and enjoys in its market a market share of more than 50%. SAP has been successful in expanding both in the US and Asia; the company has built a world-class international network of software developers and system analysts. SAP has been a successful innovative and increasingly internationalized company which has largely relied on internal growth, but occasionally also has acquired small innovative firms which reinforce the company's development portfolio. SAP has called for institutional reforms in Germany and the EU, respectively, so that institutions and rules – including those affecting labour markets – are better suited to the needs of modern IT firms. SAP has created broad networks of partners in the business community and in academia worldwide. Moreover, SAP has actively supported ICT modernization initiatives in Germany/the EU, the US and Asia. SAP is one of Europe's few globally leading companies in software development. One can only hope that institutional modernization in the Community and policy reforms in the context of the Lisbon Agenda will reinforce the opportunities for modern software companies which offer attractive jobs, high remuneration and crucial products for economic modernization and raising productivity in the business community and in the public sector.

6. Selected Figures and Tables/Data Analysis

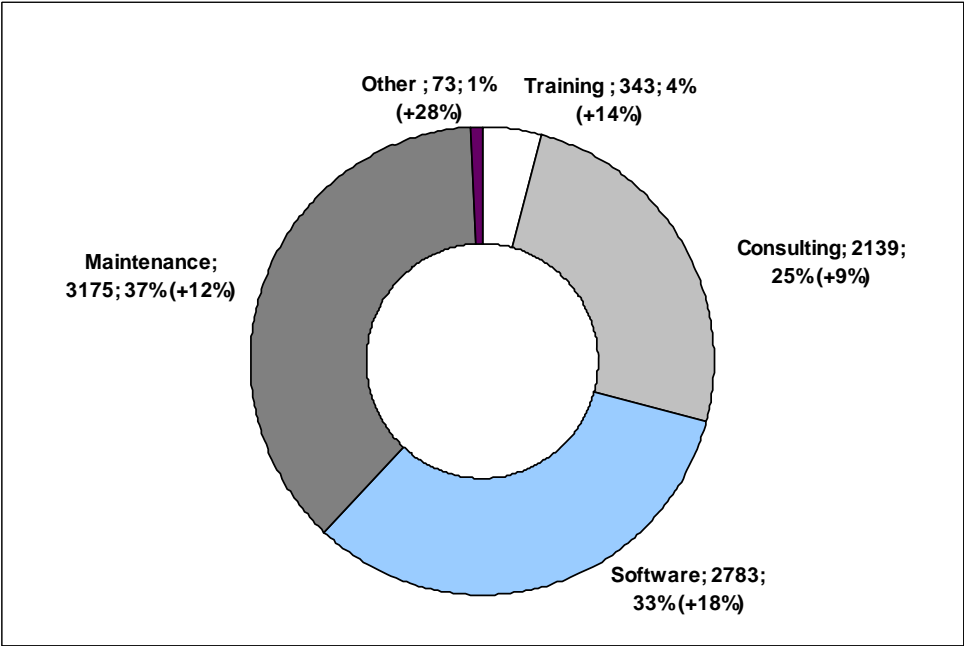
Figure 2: Relative Peer Group Share



Source: SAP Annual Report 2005

Note: Product related revenues (software licenses 2,8 billion €, maintaining 3,2 billion €) are much higher than service oriented revenues (consulting 2,1 billion € and teaching 3 million €) in 2005.

Figure 3: Revenues Breakdown - by Activity*



*in Euro million / percent / change since 2004

Source: SAP Annual Report 2005

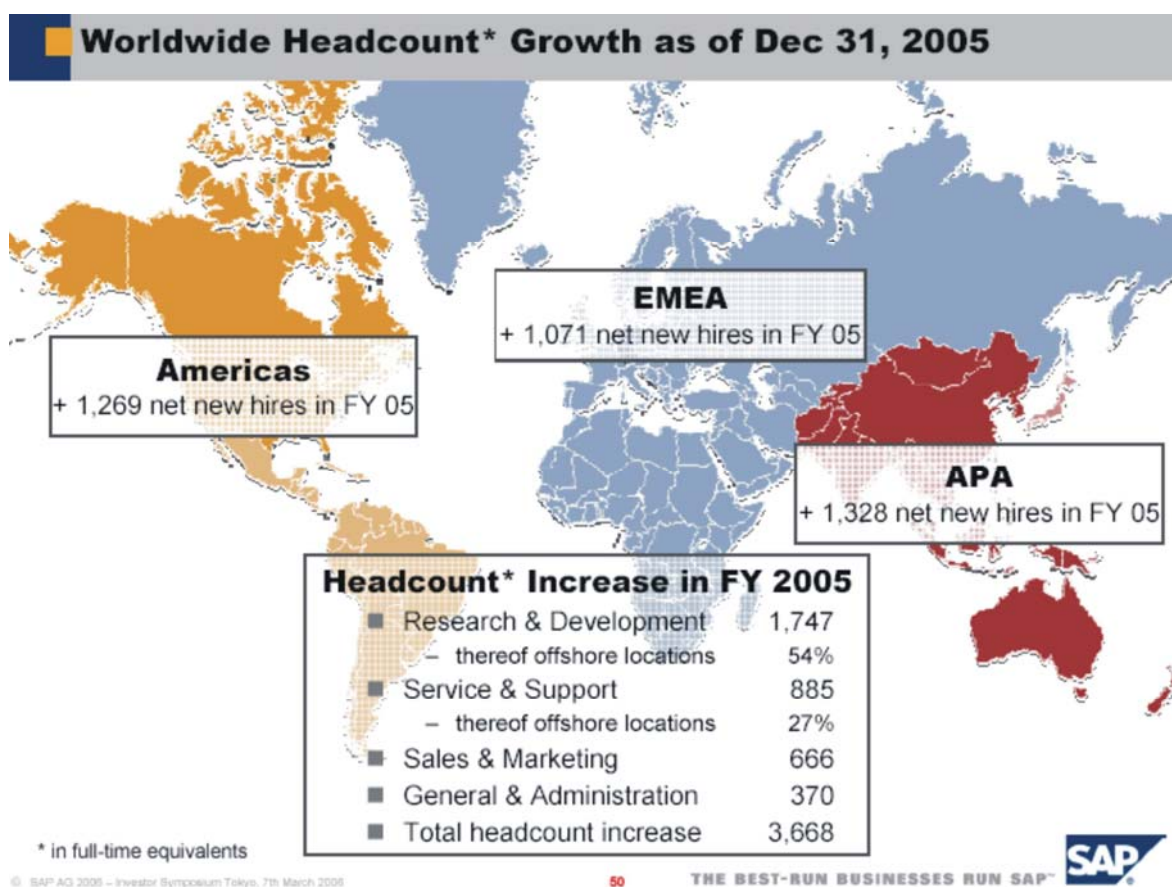
Table 1: Worldwide Headcount Dec 31, 2005*

	12/2005	09/2005	12/2004	% seq. Dec/Sep	% yoy. 05/04
Group	35.873	35.022	32.205	2	11
EMEA	21.729	21.439	20.658	1	5
Americas	7.953	7.617	6.684	4	19
APA	6.191	5.966	4.863	4	27
R&D	11.629	11.132	9.882	4	18
Services & Support	14.390	14.245	13.505	1	7
Sales & Marketing	6.249	6.165	5.583	1	12
General & Administration	3.605	3.480	3.235	4	11
	FY 2005	Q4 2005	Q3 2005	Q2 2005	Q1 2005
Net new hires	3.668	851	927	886	1.004

*in full time equivalents

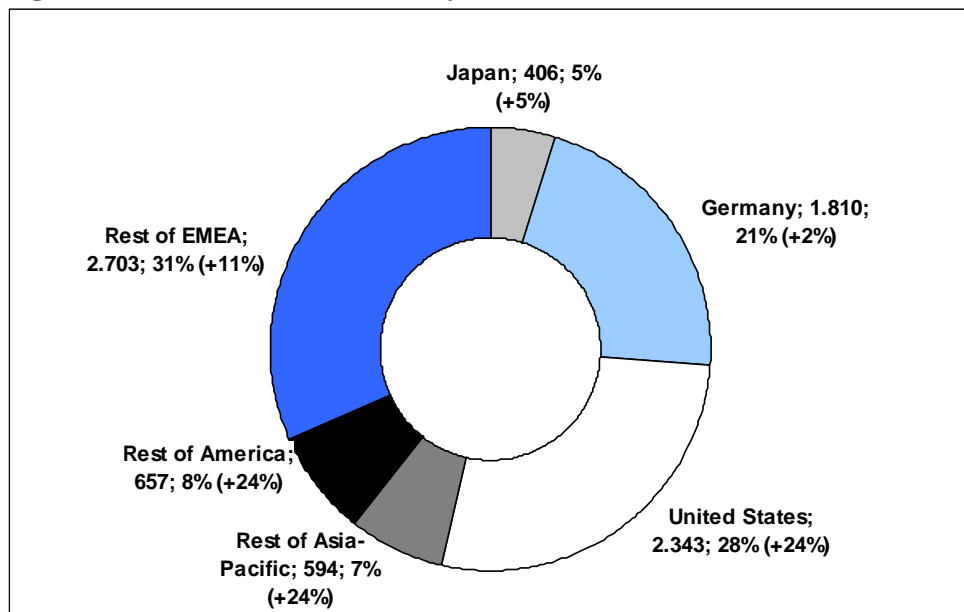
Source: 'Presentation 'Accelerated Growth from Smart Investments', SAP Japan

Figure 4: Worldwide Growth of Headcount Dec 31, 2005



Source: 'Presentation 'Accelerated Growth from Smart Investments', SAP Japan, 2006

Figure 5: Revenue Breakdown by Sales Destination



in Euro million / percent / change since 2004

Source: SAP Annual Report 2005

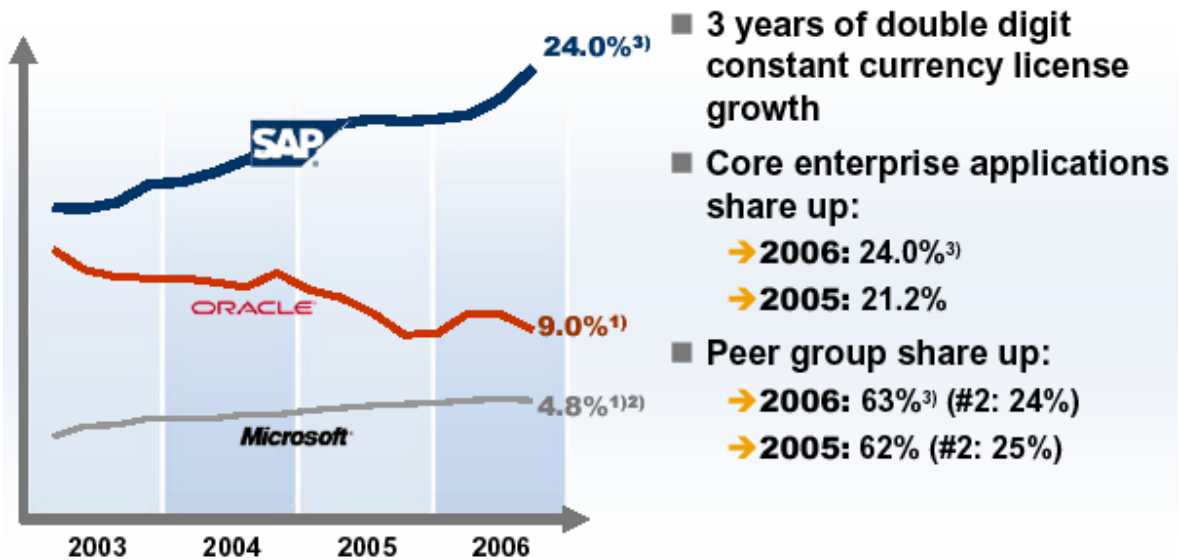
Table 2: Financial Figures of SAP, Key Figures - Full Year 2005

	Financial Year 2005 in millions Euro	Δ % compared to FY 2004
Software Revenues	2.783	18
Total Revenues	8.513	13
Operating income	2.331	16
Operating income margin as a % of sales	27,4 %	0,5 percentage points
Net income (after tax)	1.496	14
Net income margin as a % of sales	17,6 %	0,2 percentage points

Source: 'Presentation 'Accelerated Growth from Smart Investments', SAP Japan, 2006

Appendix

**Figure 6: SAP Outperformed the Market Again
Increasing Share Gains**



Source: SAP Analysis based on Company Data and Financial Analysts Estimates as of January 23rd 2007

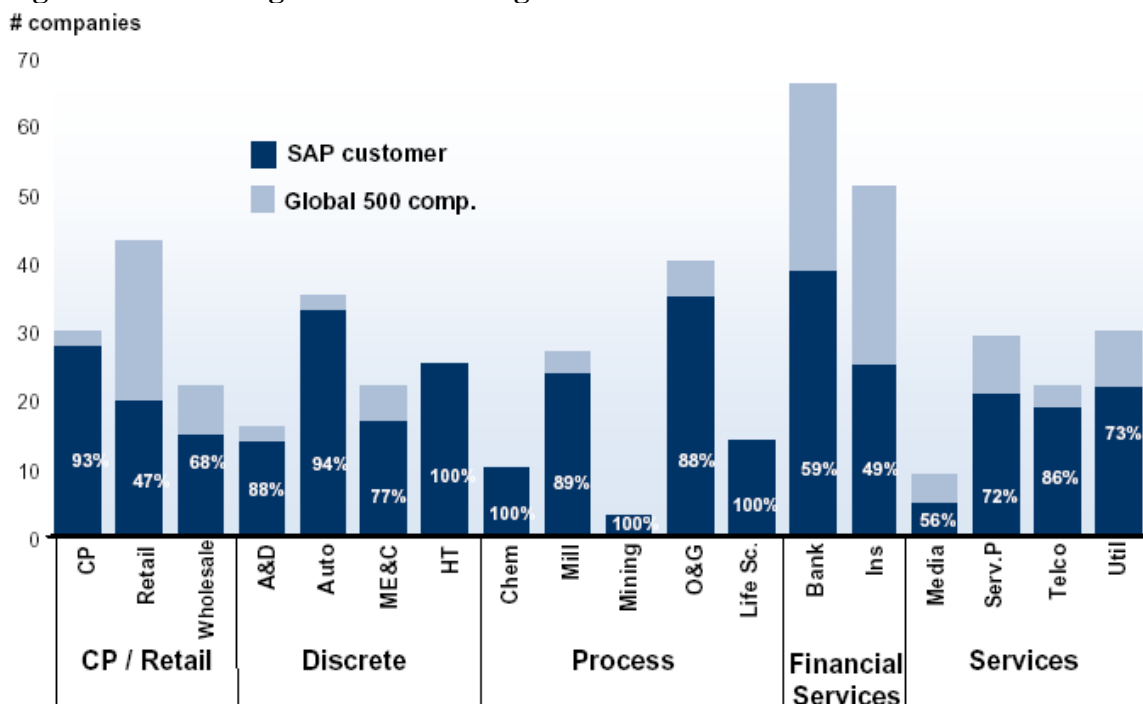
1) Forecast by Financial Analysts (MSFT) and SAP internal estimates

2) Fiscal year is not calendar year - Comparison based on most recent quarter (e.g. SAP Q1 vs. Oracle Q3)

3) Including one-time negative impact of Q3 contract settlement of € 30 million

Source: BRANDT (2007)

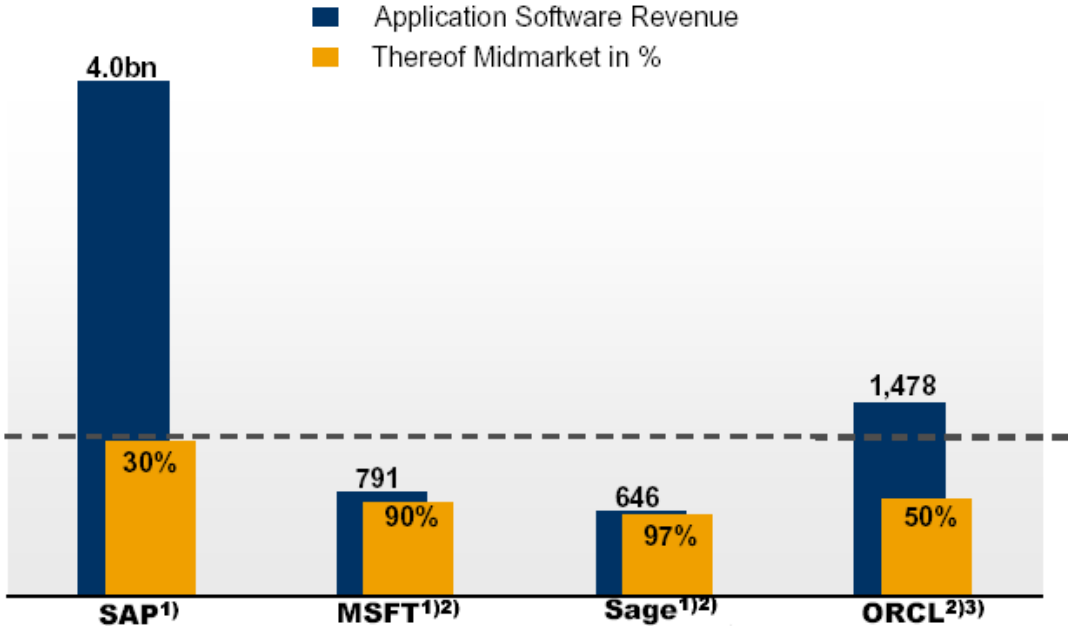
Figure 7: Increasing Account Coverage in Global 500



Source: Fortune Magazine, Global 500 2005; SAP Analysis 2006

Source: BRANDT (2007)

Figure 8: SAP Leading in the Small & Midsized Business Segment
 (rolling 4 Q1 2006-Q4 2006E Application Software Revenues)
 in \$ mill.



Source: SAP Analysis based on Company Data and Financial Analysts Estimates as of January 20th 2007

1) Forecast by Company Data and Financial Analysts (MSFT, SAGE) and SAP estimates based on Order Entry

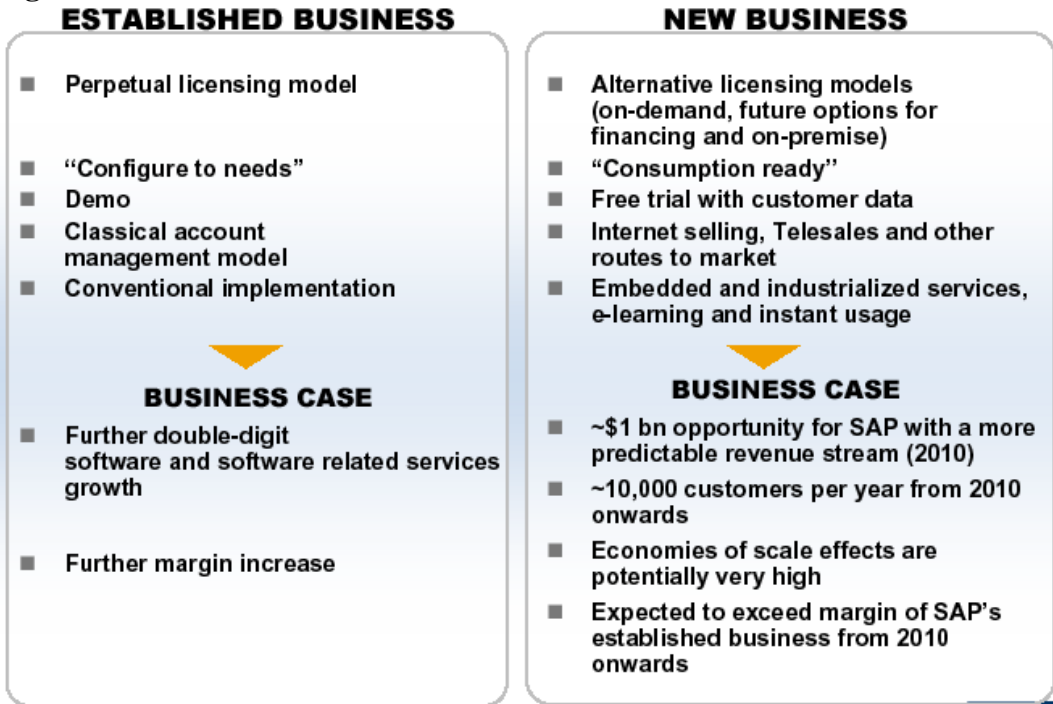
2) Fiscal year is not calendar year - Comparison based on most recent quarter (e.g. SAP Q4 vs. Oracle Q2)

3) Oracle including PeopleSoft, Retek, Siebel

Currency conversion based on quarterly Euro-Fixings (Frankfurt am Main)

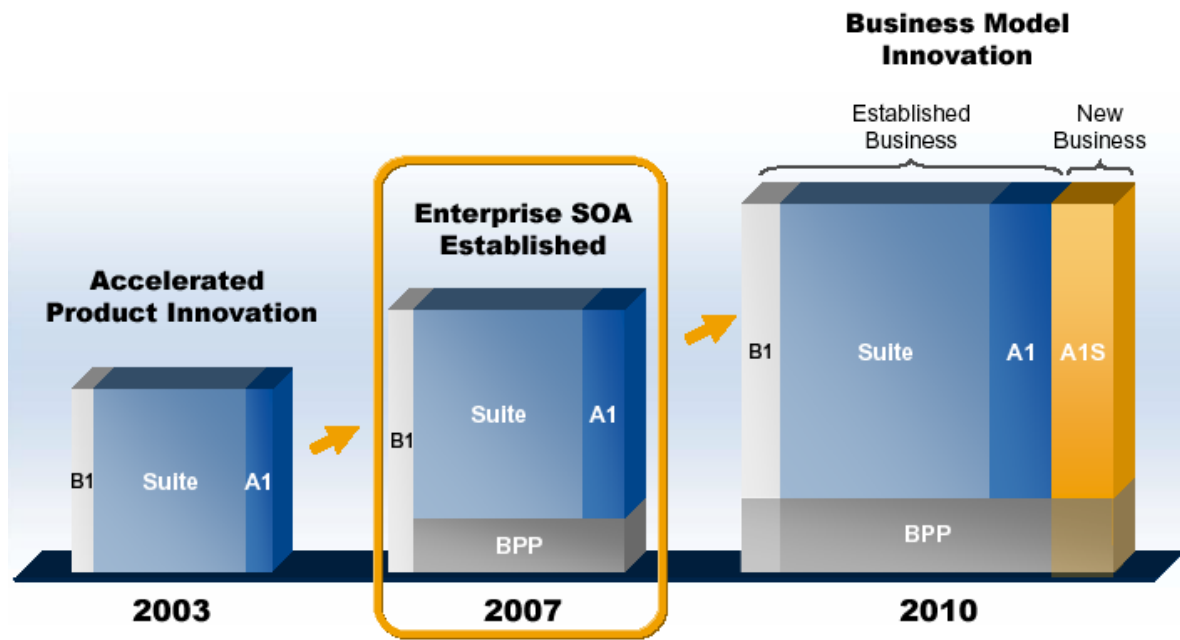
Source: BRANDT (2007)

Figure 9: Established Business vs. New Business



Source: BRANDT (2007)

Figure 10: SAP's Road Map to Continued Success



Source: BRANDT (2007)

References

The case study is based on various sources, including company sources:

For Indicators on sales by Geography:

<http://www.sap.com/company/investor/reports/annualreport/2005/en/resp/kennzahlen.html>

Employee related information can be found under:

<http://www.sap.com/company/investor/reports/annualreport/2005/en/lage/mitarbeiter.html>

For breakdown of employees by geographies see XLS on SAP Investor Homepage

http://www.sap.com/company/investor/reports/quarterlyreport/2006/xls/SAP_Q1_2006_e_final.xls

For further detailed information please check and the newly released SAP Annual Report 2005:

http://www.sap.com/company/investor/reports/annualreport/2005/pdf/2005_SAP_Annual_Report.pdf

and the (SAP financed) Economist report on Business 2010:

http://graphics.eiu.com/files/ad_pdfs/Business%202010_Global_FINAL.pdf

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