Research Assessment 2

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Subject: Introduction to SAP Software

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Assessment:

Last week, I established that I would be conducting more research on the SAP software from the Enterprise Systems (ES) applications for the next few weeks. Being deceived by the fact that I thought the article I'm continuing would cover the specific software of SAP, I read through a few more pages in order to find what I was hoping for. Instead, the article continued talking more about the education of SAP in colleges, which is something I intended to research at some point throughout my adventures in SAP, but just not yet. Although I really want to learn more about the actual software rather than the basis behind it, I think it is actually better that I am starting from the foundation and building myself into understanding the subject. This way when I get to studying the depths of SAP I will understand where the best to least best places are in the world for working in SAP.

In a brief summary, this week's reading over the education of SAP around the world primarily focused on lecturers' experiences, understanding, and administration of the subject. It also talked about where SAP is mainly concentrated around the world and why there has been a steady decrease in the implementation of SAP in many places. The reading compared an older survey that I read in last week's reading to a more recent survey that took place in 2005, in which students from the top universities around the globe that learned SAP were asked questions about their experience learning SAP. Overall the rating of learning SAP in these universities stayed the same through both surveys, which I found quite odd. If the best way to teach SAP is through hands-on experience, then wouldn't the rating go up because there are more people who have gained experience and more professionals in the field?

A little towards the end of the reading, I finally saw the word "consulting" and thought to myself "YES, FINALLY!" SAP consultancy and software consultancy in general is something that I have been researching for a lot longer than just the past few weeks. Consultancy has always been something that confused me. Whenever I heard that someone was a consultant for some random company, I used to think that he or she worked for a bank (don't ask me why because I have no clue either). But after conducting two research interviews this week with two consultants in two competitor companies called Accenture and Credera, I finally had a

mind-blowing understanding of what consultants usually do. Although different consultants have different roles to practice, the overall idea of being a consultant is the same.

In the reading, when it talks about consultancy it states that it is one of the “primary training opportunities to learning SAP.” The reason why this excited me a lot is because if I end up wanting to learn SAP sometime in the future, it means that I can start traveling from the educational level, way sooner than I thought. Because many SAP consultants (and really any consultant in general) travel a lot around the world in order to find different projects the learning for SAP is traveling as well. This means that I can gain the experience to learn about SAP and consultancy by traveling, which is amazing.

SAP tools used to learn

referencing/using SAP or in which he/she plans to reference/use SAP in the future. For each unit, the respondent was required to provide details of the subject in terms of number of hours for lectures/tutorials and consultation. The respondent was also required to indicate the SAP modules the unit touched on and SAP support tools used in the course of this unit. Inputs were measured on a five point Likert scale from "casual" to "in-depth". The data collected in this section provided insights into the detailed design of the curricula and the most popular SAP solutions.

Talks about the student survey compared to lecturer survey

3.4 The Student Survey

A main motivation for the survey was the collection of feedback from the students. In the end, students are the customers of the entire SAP education program. Exploring their feedback is similar to a customer satisfaction study. The student survey was a significantly reduced subset of the lecturer survey with some variations. Students were approached by the lecturers involved in this study within SAP-related tutorials. The web-based design of the survey allowed an easy integration into hands-on sessions with the SAP system. The survey for the students has been very brief and on average it took 5 minutes to complete it. There were no incentives for the students to participate in this survey. There were only two sections in the survey:

(A) Major Issues and Success Factors
(B) Learning SAP

Personal Experiences with SAP and how the perspectives differ for everyone

3.4.1 Major Issues and Success Factors: Similar to the lecturer survey, this section included only two questions. The first was *"Please list any major issues that you have experienced with learning SAP solutions as part of your courses."* The student was required to provide up to five answers. This allowed us to compare the students' viewpoints with the lecturers' viewpoints. The second question was *"Please list any key success factors you have identified for learning SAP solutions."* Success is viewed very differently by individuals. With the data captured here, we could contrast the students' perspective with the lecturers' perspective.

3.4.2 Learning SAP: Successful ES education requires a deep understanding of the main challenges students face when they are exposed to SAP solutions. This section investigated a few of the main perceptions by students in this context.

4. DATA COLLECTION AND ANALYSIS

Language problems from so many SAP classes in different countries

4.1 Issues related to the international nature of this study

Data in this study had been gathered from lecturers from all over the world. This gave rise to many problems mainly in terms of language and the different semester structure in the different countries.

In order to increase the user acceptance and the understandability of the survey, it was decided that the two surveys also be translated by native speakers into Spanish and German. Once the data collection phase was completed, translators had to be engaged again to convert qualitative data back into English to maintain consistency for the entire data analysis.

Different semester timing in different parts of the world problems

The next problem was the different semester periods. As students were involved in the data collection, it was important to send out the survey at a time when the students could be approached (e.g. in a tutorial). Furthermore, students had to have a certain experience as consumers of ES education in order to develop an opinion. As German participants formed a significant percentage of the respondents and the German semester timeframe is quite different, we broke the invitation to complete the survey into different phases: global universities and German universities. The non-German participants received the first invitation on 19 September 2003. A reminder was sent out on 1 October 2003. The first invitation to the German participants was sent out on 26 November 2003 followed by a reminder on 8 November 2003.

Qn No.	Question	Scale
Q4	Please rate the ease of use of SAP software.	1: very difficult 5: very easy
Q5	Have you explored the SAP software beyond the classroom experience?	1: not at all 5: very much
Q6	Do you believe your SAP experience added value to your employability?	1: not at all 5: very much
Q7	Did the exposure to SAP software increase your interest in a SAP-related occupation?	1: not at all 5: very much
Q8	Overall, how would you rate your enjoyment of your experience with SAP software?	1: not at all 5: very much
Q9	What is your overall impression of SAP as a corporation?	1: positive 5: negative

Table 4. Questions on Students' Learning of SAP

4.2 Response Rate

Talks about varies/ errors in the survey with lecturers' responses

4.2.1 Lecturer survey: 109 of the 1731 e-mails sent out did not reach their destination. Either the contact person was no longer with the institution or the e-mail bounced back because of an invalid address. A further 23 contacts replied stating that they do not have any SAP experience and asked to be excluded from the contact list. This leaves 1731-109-23 = 1599 valid contacts. During the course of the survey, 17 additional contacts were included due to recommendations from other contacts increasing the number to 1616. Of these 17 contacts 14 responded to the survey. At the end of the survey, 305 persons responded, which leads to a response rate of 19 %. Of these 305 responses, only 238 completed the entire survey, i.e. 15 %. 20 participants indicated that they do not have any experiences in SAP education and 47 participants did not complete the entire survey. This could be because the person responding was heavily engaged with other tasks while completing the survey or the completion of the survey took longer that the participants expected and they were not able to finish the

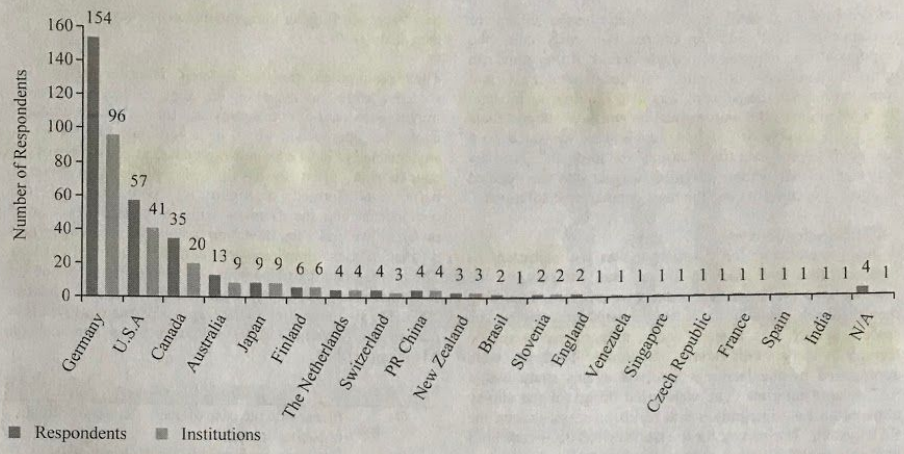

Figure 1. Respondents distribution

survey. Still, 15 % is perceived as an overall satisfying response rate for the following reasons:

- We assume that a significant number of the 1616 contacts were not involved in SAP education, but did not bother replying to our two emails.
- In many cases we had a number of lecturers from the same institution. In some cases, this included more than 10 names. We are aware of a number of cases, in which those individuals pooled their answers.
- The collection of detailed data on the individual units can be quite time consuming, which might have been an issue for some participants.
- Though we already offered the survey in three languages, barriers still may have existed for some regions, for example in Japan or France.

The 305 responses came from 205 different institutions and 19 different countries. 50.5 % of the respondents came from Germany. Participants from Germany also represent 46.8 % of the institutions responding though they only represented 35.3 % of all institutions in the contacts provided by SAP. The absolute high number of responses from Germany can be explained by the long tradition of SAP education in Germany, which goes back to 1993, the mature German SAP University Alliance program with a full time University Alliance manager for more than 10 years, the high number of Fachhochschulen (universities of applied science) involved in SAP education and the overall German roots of SAP. USA comes in second with 18.7 % of the respondents from 20 % of the total institutions that responded. This is followed by Canada with 11.5 % respondents and 9.8 % institutions. Figure 1 provides a detailed view on the regional profile of the individual responses.

4.2.2 The Student Responses: 714 students from 8 different countries participated in the survey. 63 % were German students, 18 % American students, and 13 % Australian students. Since the student's survey was conducted anonymously, many did not include the name of their institution. As we did not send the questionnaire directly to the students, we are not able to provide a response rate for the students' feedback.

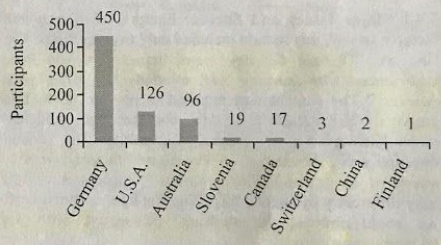

Figure 2. Student's response distribution

The ratio of lecturer to student is exactly *1:3*. Students from 8 different countries responded to the survey and most came from Germany, USA and Australia. Since 50.5 % of the lecturer respondents came from Germany, it is consistent to the result that the majority of students that completed the survey came from Germany as well. The second most responses came from USA also consistent to the lecturer's participation. Since this survey was initiated by an Australian university, we had direct access to lecturers and students in this region. This explains why Australia has 13.45 % of the total student responses. Though we tried to time the survey according to the semester pattern, we had a number of responses from lecturers stating that their university's curriculum time does not coincide with the survey. This means that many of their students may not have sufficient experience in terms of exposure to SAP solutions. Therefore, they were unable to allow the students to respond to the survey.

SAP education primarily runs throughout Germany

The lecturer to student ratio is 1:3 and most [redacted] studies are based in USA, Germany, and Australia

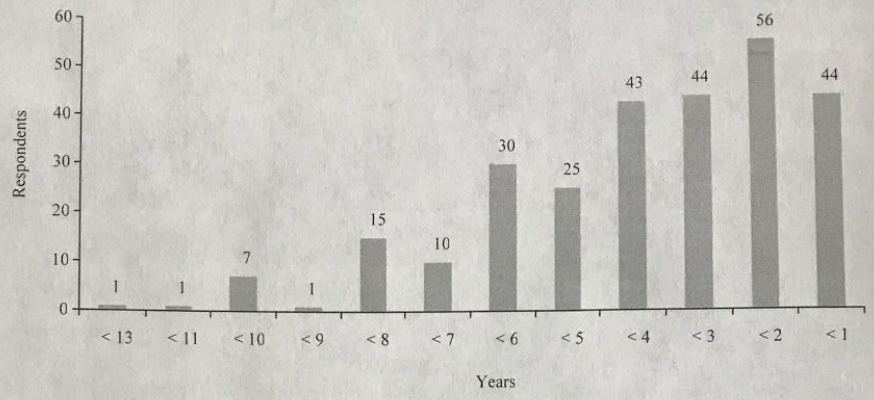

Figure 3. SAP teaching experience in years

4.3 Experiences

The average SAP teaching experience of the responding lecturers is 3.5 years with a 2.24 standard deviation. 50 % of all respondents have less than 3 years experience, 95 % have less than 8 years experience (see Figure 3).

84 % of the respondents have at least 1 year of experience in teaching SAP. This shows that the results captured from the following sections seem to be sufficiently accurate.

Taking an institutions' perspective on the experience with SAP solutions, we found an even higher maturity (Figure 4). The average teaching experience of the 206 responding institutions is 4.3 years with a standard deviation of 2.33. One of Canada's Universities has 13 years of SAP experience, while in Germany some institutions started teaching SAP as early as 1993. The first institutions in the USA followed in 1996. The following chart shows the distribution of the top five country's experience based on the year the country's institutions first implemented SAP solutions.

We also investigated the status of the SAP version currently used. The results suggested that the applications being used were very current with 61 % of the institutions using SAP 4.6 and 31 % using SAP 4.7, the most current version at the time of this survey.

The pattern of distribution shows a general peak from 1998 to 2000. However, it also shows a general steady decline in implementation. This could be one of three reasons:

1. Most institutions have already implemented SAP.
2. There is a decrease in demand for implementing SAP solutions in the curriculum.
3. Not all schools requesting membership in the University Alliance Program are accepted. Increasingly, SAP rejects applications for membership in the University Alliance Program for two reasons. First, an institution does not demonstrate the required commitment (e.g., attending workshops). Second, the submitted curriculum plan for the integration of SAP into the curriculum lacks the required detail or is overall too weak.

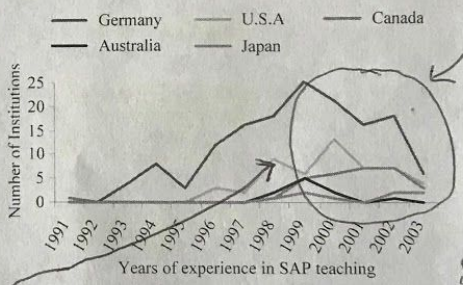

Figure 4. SAP experience by country's institutions

4.4 Learning SAP

One of the key challenges in ES education is to develop the required knowledge of the selected ES solution. Thus, it was interesting to explore how the lecturers rate alternative ways of understanding SAP. Figure 5 shows the results based on a five-point Likert scale with 5 representing 'highly important'. The responses have been analyzed based on the simple arithmetic average knowing that this value has limitations in its validity when using ordinal scales. It is obvious that hands-on experiences are the most important source of knowledge followed by SAP training courses. It is interesting to note that this is the same rating as in our '99 survey, which clearly emphasizes the importance of hands-on experiences and training courses. At the same time, it characterizes the uniqueness of SAP as a curricula subject.

In this section, there was an opportunity to provide other learning avenues. 33 lecturers took this opportunity. Answers other than the given categories were grouped into the following answers:

Talks about how much experience lecturers generally have in the field.

Latest SAP version being used

Several reasons can define the decline in SAP growth in recent years

Results from the earlier survey are the same when it comes to how learning SAP is the best

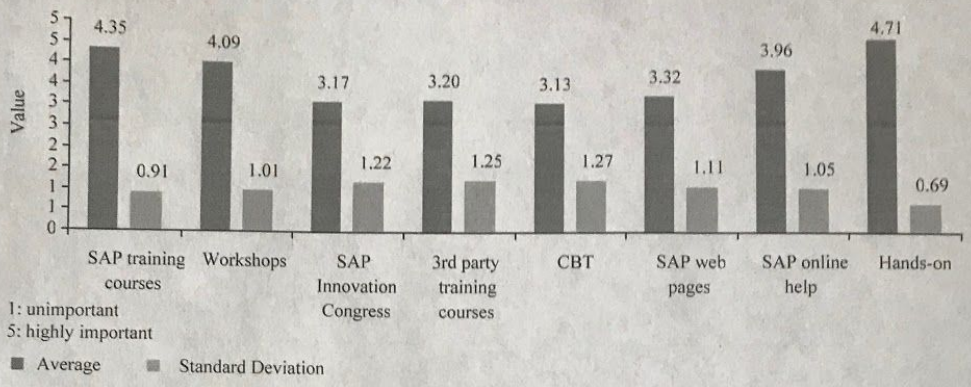

Figure 5. Learning SAP

1. exchange of experience with peers, trainers, mentors, specialists, consultants
2. literature, self-study
3. other material provided by the SAP University Alliance Program

A detailed breakdown of the answers categorised them into the following top six answers.

- 7 respondents state "training materials" including SAP training materials, books on SAP and other relevant literature
- 6 respondents state "exchange of experience"
- 4 respondents state "consulting with specialists" such as professional SAP consultants
- 3 respondents state "practical experience" such as adopting industry processes and conducting case studies
- 2 respondents state "application help and support"
- 2 respondents state attending "SAP events" such as SAPPHIRE and University Alliance workshops
- There are respondents stating self-study, in-house training, virtual lessons as well as attending faculty workshops

The results show that a number of respondents regard "training materials" and "exchange of experience" as highly important. This is followed by "consulting with specialists" and gaining "practical experience" as the primary training opportunities for learning SAP. All the additional suggestions repeatedly state the need for knowledge exchange through colleagues with common interests. This is seen in "exchange of experience", "consulting with specialists", "application help and support" and "SAP events". All these paradigms have some form of interaction and exchange involving parties of common interest. In this case it is teaching SAP. This is widely known as "communities of practice". These findings seem to support the need to form or join forums.

4.5 Administering SAP

Implementing and continuously maintaining and upgrading a SAP system is a challenging and time consuming activity, which in many cases provided the single most significant hurdle on the way to successful ES education. Thus, it is not a surprise that hosting solutions are of increasing popularity in the context of ES education.

In this section we tried to find out the actual status of how SAP solutions are managed. An institution can either host its own SAP solution, use a SAP UCC, be a SAP UCC itself or use a third party to host SAP. The survey found that approximately 60 % of all participating institutions are a customer of an SAP UCC. Around 30 % of the institutions (still) host their own SAP solution. 22 responses came from universities which are SAP UCC themselves. In total, 285 responses were received in response to this question. Figure 6 shows the detailed results.

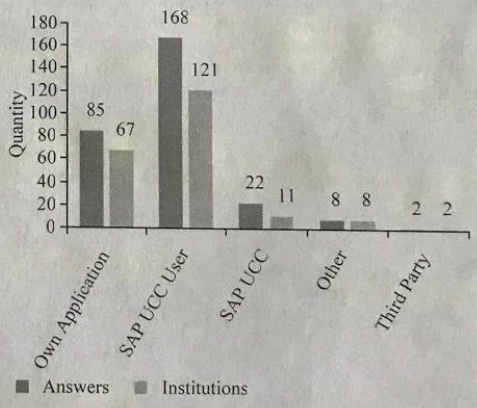

Figure 6. Distribution of SAP solution source

The very high number of SAP UCC customers shows the successful roll-out of this concept. A few respondents stated alternative setups. This included also mixed solutions, e.g. hosting a part of the SAP landscape and accessing a hosted solution for other more specialised components (e.g. CRM, Data Warehousing, and Strategic Enterprise Management). In individual cases, solutions provided by an SAP lab or the official SAP training platform are used.