SALARY COMPARISON STUDY OF SAP VS. NON-SAP BUSINESS GRADUATES

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ABSTRACT

SAP is an enterprise resource planning information system (ERP) and is a comprehensive, packaged software integrating a complete range of business processes and functions in order to provide a broad view of business within a single information system. Today, over 850 of the Fortune 1000 run SAP as their ERP system. In 1997, Central Michigan University (CMU) signed an alliance with SAP becoming one of the first universities to begin educating its students about ERP by using the SAP software to support various business courses. CMU has offered more than eighteen different SAP supported business courses in its business curriculum as well as offering the SAP Certification Academy to its business students. This study surveyed CMU's business graduates on three separate occasions over the past eight years to determine if there was a difference in starting salaries for those who had taken one or more SAP supported classes versus those business graduates who had not taken any SAP classes. The results of the study indicates business graduates with SAP classes received substantially higher starting salaries than business graduates who had not taken any SAP classes. The average starting salary of SAP business graduates was $4,056 greater than non-SAP business graduates, and for some business majors, the differential was as great as $9,562.

Key words: Enterprise Software, ES, Enterprise Resource Planning, ERP, SAP R/3 System, Curriculum Integration, Curriculum Framework, Curriculum Design, University Alliance, Salaries.

INTRODUCTION

SAP is an enterprise resource planning (ERP) system [1, 12], serving as a comprehensive, packaged software that integrates the complete range of business processes and functions in order to provide a broad view of business within a single information system. These systems encompass the core transaction processing activities of a business enterprise, which is more than just resource planning. The widespread use of enterprise software has increased the need for students with knowledge of this software. Today, over 850 of the Fortune 1000 run SAP as their ERP system. In an effort to meet this need, SAP AG initiated the SAP University Alliance Program (UAP) in North America in 1996 [3, 14]. That program now encompasses approximately 600 universities world wide. The primary purpose of the SAP UAP is to make students more knowledgeable about applications of enterprise software in businesses while concurrently providing faculty with the opportunity to employ cutting-edge information systems technology [11].

In 1997, the authors' university, Central Michigan University, became one of the first universities in America to become an SAP alliance member and utilize the enterprise software in its business curriculum. CMU's integration of this complex enterprise software into its academic curricula posed many choices, ranging from "doing very little" to "doing much" which required faculty to undertake extensive integration requiring considerable effort in the development of course materials to support that integration [11]. Extensive research in integrating enterprise software into a college of business curriculum [2] would indicate that some integration was appropriate. Over the past ten years, at least 18 different undergraduate and graduate courses have been taught at CMU supported by SAP [7, 8]. CMU has also implemented a new curriculum in 2004 which integrated SAP into its core business classes, classes that all business students are required to take, i.e. at the sophomore level: the Information Systems and Managerial Accounting courses; and at the junior level: the Integrated Business Experience course [7, 8]. Beyond these core and discipline based courses, students also had the opportunity to participate in an SAP Academy taught by certified SAP faculty. This SAP Academy, TERP 10, my SAP ERP Integrated Business Processes, offers official SAP certification to students who pass the exam at the end of the two-week, eighty-hour course [10]. To date, ten academies have been offered to CMU students. In order to participate in the SAP Academy, business

students must have experience with SAP by participating in SAP classes offered by CMU.

The purpose of this study was to determine if there was a substantial difference in starting salaries for those CMU business graduates who had taken one or more SAP supported classes versus those CMU business graduates who had not taken any SAP supported classes. The study is based on data obtained from the CMU's Career Services Office. The confidential data on business graduates from this office is delayed by twelve to fourteen months, thus the most current study is approximately one to two years behind the current day's salary offerings. Data was collected on those business students who had graduated from CMU from 1998 to 2005. The study was carried out in three phases. The first phase included data from 1998 to 2001. The second phase included data from 2002 and 2003. The third phase included data from 2004 and 2005.

The objectives of the study were to: 1) obtain information on the starting salaries of students graduating with a business degree from CMU; 2) compare the starting salaries between the SAP business graduates and non-SAP business graduates; and 3) compare the starting salaries among the various business majors. For the purpose of this study, "SAP business graduates" were business students graduating with one or more SAP related classes and "non-SAP business graduates" were business students graduating with no SAP related classes.

The study includes all business graduates who have disclosed their starting salaries in the official survey conducted by CMU's Career Services Office. A total of 475 business graduates reported their starting salaries for the period of 1998 to 2001; 355 graduates reported in 2002-2003, and 367 graduates reported in 2004-2005. Other information obtained included GPA, graduation date, gender, and major.

FINDINGS

In 1998 to 2001, 475 business graduates reported their salaries to CMU. Of these, 258 business graduates (54%) had taken at least one SAP class, 217 business graduates (46%) had not. In 2002 to 2003, 355 reported their salaries, and of those graduates, 194 graduates (54%) had taken at least one SAP class. In 2004 to 2005, 367 reported their salaries, 149 graduates (41%) had taken at least one SAP class. Two of the three time periods for this study had greater than fifty percent of the graduates reporting they had taken at least one SAP class.

Figure 1 shows for all eight years, starting salaries for business graduates who had taken at least one SAP class were greater than the business graduate with no SAP class. The greatest differential ($6,735) between SAP and non-SAP business graduates was in the year 1999. The average starting salary for the SAP 1999 business graduates was $38,520 and for the non-SAP 1999 business graduates the average starting salary was $31,785. The second greatest differential ($5,937) between SAP and non-SAP business graduates was in the year 1998. The average starting salary for the SAP 1998 business graduates was $37,800 and for the non-SAP 1998 business graduates the average starting salary was $31,863. The third greatest differential ($5,653) between SAP

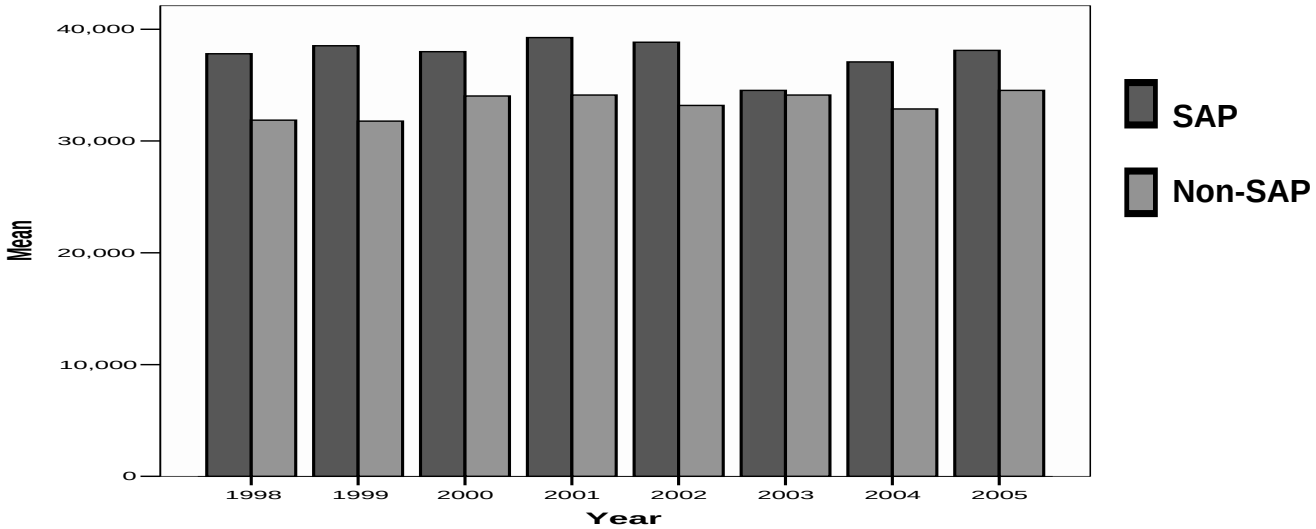

FIGURE 1. Salary Comparison of Business Graduates SAP vs. Non-SAP 1998 – 2005

and non-SAP business graduates was in the year 2002. The average starting salary for the SAP 2002 business graduates was $38,839 and for the non-SAP 2002 business graduates the average starting salary was $33,186.

In 2002, although there was drop in the starting salaries for all majors, SAP business graduates still earned more than non-SAP business graduates. The average starting salary for the 2002 SAP business graduates was $35,800 and for the non-SAP 2002 business graduates the average starting salary was $33,200. The trend seemed to continue in the year 2003 where once again the starting salary was below that of 2002. The average starting salary for the SAP 2003 business graduates was $34,700 and for the non-SAP 2003 business graduates the average starting salary was $34,200. In 2004 and 2005 the average starting salaries increased again to $34,508. and $36,098, respectively.

The average starting salary of SAP business graduates between 1998 and 2001 was $38,348, which is $5,254 greater than the non-SAP business graduates with an average starting salary of $33,094. The average starting salary of SAP business graduates in the 2002 to 2003 was $35,325, which is $1,777 greater than the non-SAP business graduates with an average starting salary of $33,548. The average starting salary of SAP business graduates between the 2004 to 2005 was $37,450, which is $4,056 greater than the non-SAP business graduates with an average starting salary of $33,394.

Figure 2 shows the average starting salary of SAP business graduates vs. non-SAP business graduates grouped by major for 1998 to 2001. For all of the business majors reporting their starting salaries, all of the SAP graduates were paid a higher starting salary than non-SAP graduates except for the Production Operations Management major. The results reflect that the greatest differential ($10,729) between SAP and non-SAP business graduates within a major was the Marketing major. The average starting salary for the SAP Marketing major was $42,050 and for the non-SAP Marketing major the average starting salary was $31,321. The Marketing major was the highest paid major for SAP business graduates.

The second greatest differential ($8,712) between SAP and non-SAP business graduates within a major was the Management major. The average starting salary for the SAP Management major was $37,495 and for the non-SAP Management major the average starting salary was $28,783. The third greatest differential ($6,942) between SAP and non-SAP business graduates within a major was the Finance major. The average starting salary for the SAP Finance major was $39,400 and for the non-SAP Finance major the average starting salary was $32,458. The fourth greatest differential ($5,395) between SAP and non-SAP business graduates within a major was the Logistics Management major. The average starting salary for the SAP Logistics Management major was $38,832 and for the non-SAP Logistics Management major the average starting salary was $33,437. The only major where the non-SAP business graduates' average starting salary was greater than the SAP graduate was the Production Operations Management major with a differential of $1,608.

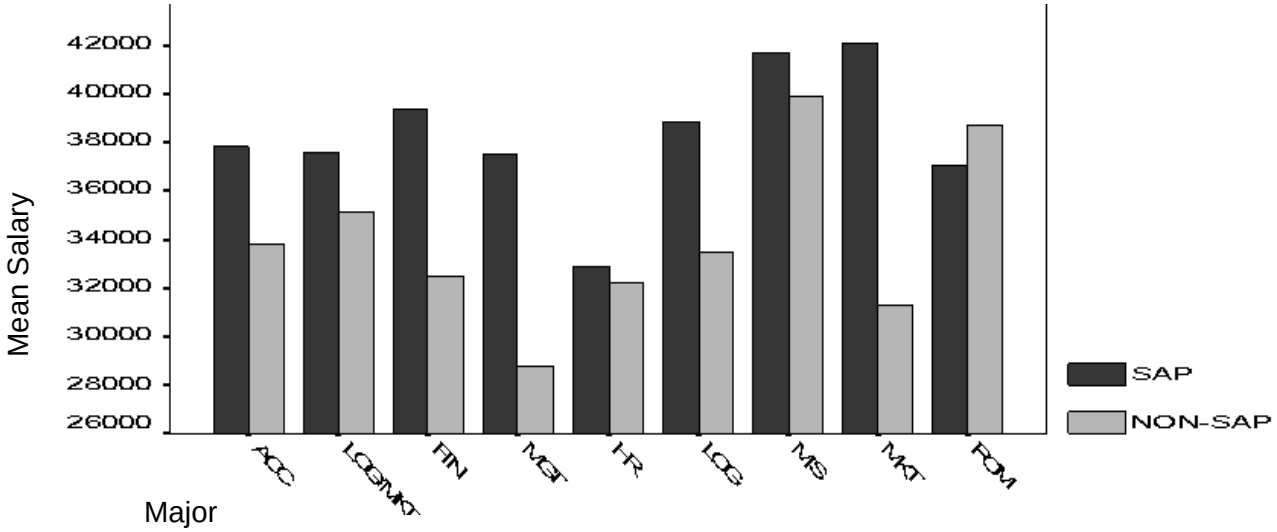

Figure 2. Salary Comparison of Business Graduates by Majors SAP vs. Non-SAP 1998=2001

Figure 3 shows the average starting salary of SAP business graduates vs. non-SAP business graduates grouped by major for 2002 to 2003. For all of the business majors reporting their starting salaries, the SAP business graduates were paid a higher starting salary than non-SAP business graduates except for the Human Resources, Logistics and Marketing majors. The results reflect that the greatest differential ($7,240) between SAP and non-SAP business graduates within a major was the Production Operations Management major. The average starting salary for the SAP Production Operations Management major was $36,040 and for the non-sap Production Operations Management major the average starting salary was $28,000.

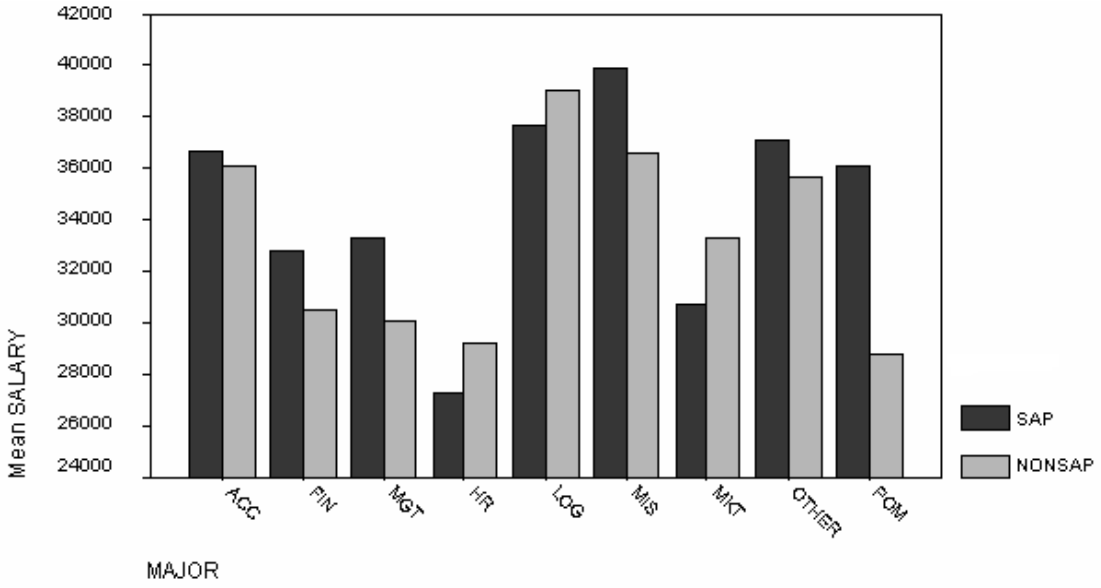

Figure 3. Salary Comparison of Business Graduates by Majors SAP vs. Non-SAP 2002-2003

The second greatest differential ($3,216) between SAP and non-SAP business graduates within a major was the Management major. The average starting salary for the SAP Management major was $33,294 and for the non-sap Management major the average starting salary was $30,078. The third greatest differential ($3,211) between SAP and non-SAP business graduates within a major was the Management Information Systems major. The average starting salary for the SAP Management Information System major was $39,853 and for the non-SAP Management Information System major the average starting salary was $36,642. The fourth greatest differential ($2,323) between SAP and non-SAP graduates within a major was the Finance major. The average starting salary for the SAP Finance major was $33,816 and for the non-SAP Finance major the average starting salary was $30,493. The majors where the non-SAP business graduates average starting salary was greater than the SAP business graduates were the Human Resource, Logistics and Management majors with differentials of $1,949, $1,274, and $2,664, respectively.

Figure 4 shows the average starting salary of SAP business graduates vs. non-SAP business graduates grouped by major for 2004 to 2005. For all of the business majors reporting starting salaries, the SAP business graduates were again paid a higher starting salary than non-SAP business graduates except for the Finance and Marketing majors. The results reflect that the greatest differential ($9,562) between SAP and non-SAP business graduates within a major was the Entrepreneurship major. The average starting salary for the SAP Entrepreneurship major was $39,000 and for the non-SAP Entrepreneurship major the average starting salary was $29,438. The second greatest differential ($8,867) between SAP and non-SAP graduates within a major was the Accounting Information Systems major.

The average starting salary for the SAP Accounting Information Systems major was $43,867 and for the non-SAP Accounting Information Systems major the average starting salary was $35,000. The third greatest differential ($6,226) between SAP and non-SAP graduates within a major was the Accounting major. The average starting salary for the SAP

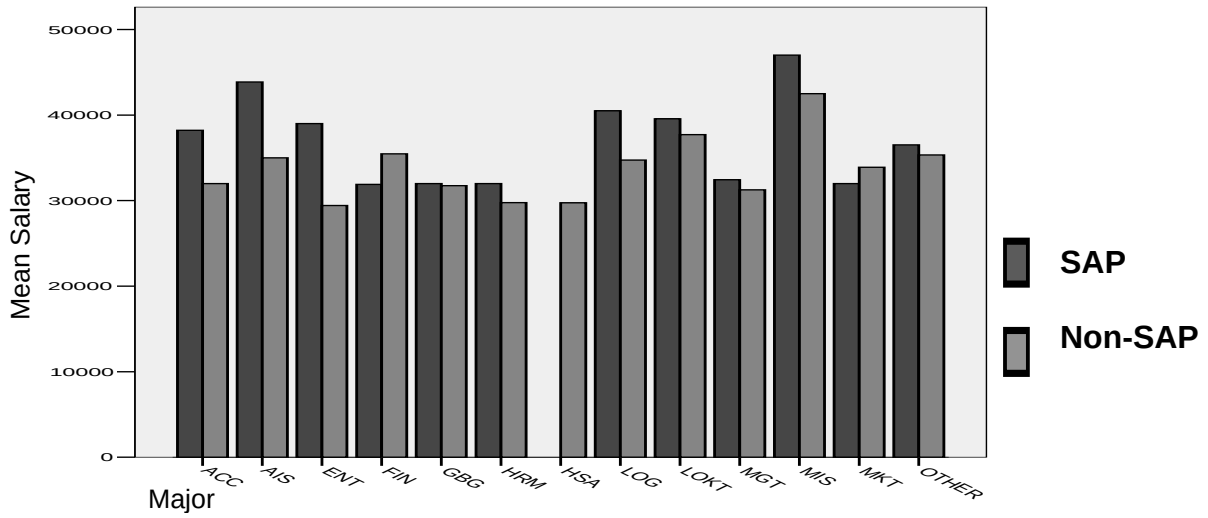

Figure 4. Salary Comparison of Graduates by Majors SAP vs. Non-SAP 2004-2005

Accounting major was $38,226 and for the non-SAP Accounting major the average starting salary was $32,000. The fourth greatest differential ($5,750) between SAP and non-SAP business graduates within a major was the Logistics Management major. The average starting salary for the SAP Logistics Management major was $40,500 and for the non-SAP Logistics Management major the average starting salary was $34,750. The majors where the non-SAP business graduates' average starting salary was greater than the SAP graduates' were the Finance and Marketing majors with differentials of $3,577 and $1,891, respectively.

Figure 5 shows the average salary of business graduates between 1998 and 2005 grouped by the number of SAP classes the business graduates had taken**.** The results show the greater the number of SAP courses taken, the greater the salary. The average salary of business graduates who had taken one SAP supported class was $36,451. For two SAP classes taken, the average salary was $38,549. For three SAP classes, the average salary was $42,846, and for four classes, the average salary was $44,125.

For the 1998 to 2001, the male business graduates who had at least one SAP class earned an average starting salary of $38,720 versus the non-SAP male business graduates who earned $35,314, an average difference of over $3,400. The female SAP business graduates earned an average of $6,680 more than the female non-SAP business graduates.

For 2002 to 2003, the SAP male business graduates earned an average starting salary of $36,146. For the non-SAP male business graduates, the average starting salary was $35,679. Again, the SAP male business graduates earned a higher starting salary, and female SAP business graduates earned $2,729 more than non-SAP female business graduates.

For 2004 to 2005, again SAP male business graduates earned a higher starting salary $38,222 than the non-SAP male business graduates who earned an average starting salary of $35,298. Female SAP business graduates earned $5,068 more than the female non-SAP business graduates.

SUMMARY

SAP has been utilized in the CMU curriculum to provide business graduates with a fuller understanding of an enterprise resource planning information system. For the past ten years, business graduates have had the opportunity to use this enhanced educational opportunity to expand their value to prospective employers. The results of this study indicate that CMU business graduates who have taken one or more SAP supported classes have received, on average, a greater starting salary than those business graduates who had not taken any SAP supported classes. The average starting salary of SAP business graduates was $3,341 greater than non-SAP business graduates. The greatest differential between SAP and non-SAP business graduates within a major was the Entrepreneurship major. The SAP Entrepreneurship major earned $9,562 more than the

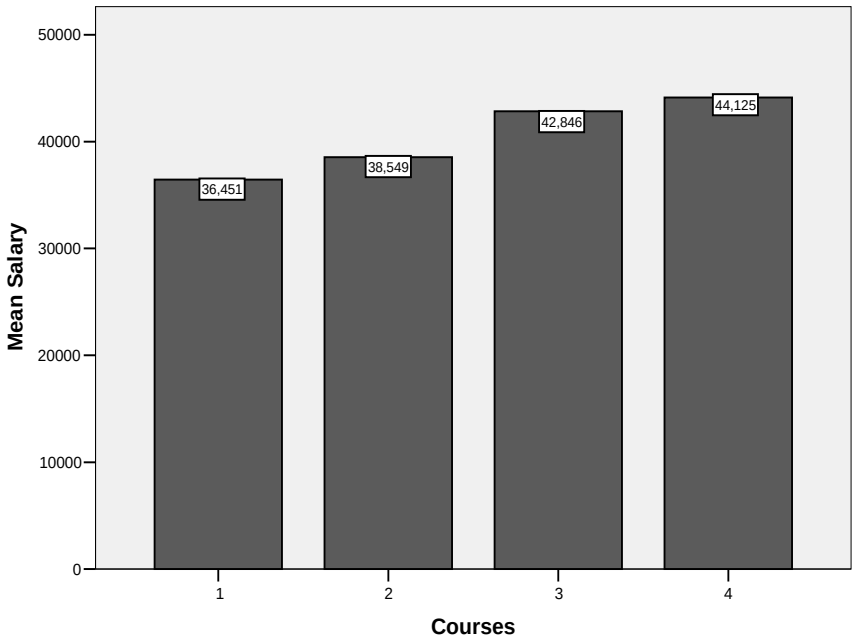

Figure 5. Salary Comparisons of Graduates by Number of SAP R/3 Supported Classes 1998-2005

the non-SAP Entrepreneurship major. The second greatest differential between SAP and non-SAP business graduates within a major was the Accounting Information Systems major. Again, the SAP Accounting Information Systems major earned on average $8,867 more than the non-SAP Accounting Information Systems major. For the SAP Accounting major, the differential was $6,226, and for the SAP Logistics Management major, the differential was $5,700. The average starting salary of SAP business graduates was substantially higher than the average starting salary of non-SAP business students, especially those with Accounting, Entrepreneurship, Management Information Systems, Management, or Logistics Management majors. Finally, the results show that as business students take more than one SAP class, their average starting salary increases. The average starting salary of business graduates who have taken one SAP supported class was $36,451; for two classes, $39,134; for three classes, $40,525; and four classes, salary was $50,250. Thus, the results of this study show that consistently over a seven year period, CMU's business graduates who have had one or more SAP classes have earned higher starting salary offers than those business students who have not had any SAP classes.

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