Journal of Information Systems Education

Volume 35
Issue 1
Winter 2024

Teaching Tip
Enhancing Student's Understanding of Enterprise Systems Using Salesforce

Jason Triche, Tianxi Dong, Jacki Landon, and Ezekiel Baied

Recommended Citation: Triche, J., Dong, T., Landon, J., & Baied, E. (2024). Teaching Tip: Enhancing Student's Understanding of Enterprise Systems Using Salesforce. *Journal of Information Systems Education*, 35(1), 25-36. https://doi.org/10.62273/LSVK6170

Article Link: https://jise.org/Volume35/n1/JISE2024v35n1pp25-36.html

Received:	September 22, 2022
First Decision:	November 30, 2022
Accepted:	February 15, 2023
Published:	March 15, 2024

ISSN: 2574-3872 (Online) 1055-3096 (Print)

Journal of Information Systems Education, 35(1), 25-36, Winter 2024
https://doi.org/10.62273/LSVK6170

Teaching Tip
Enhancing Student's Understanding of Enterprise Systems Using Salesforce

Jason Triche
Department of Management Information Systems
University of Montana
Missoula, MT 59812, USA
jason.triche@umontana.edu

Tianxi Dong
Department of Business Analytics and Technology
Trinity University
San Antonio, TX 78212, USA
tdong@trinity.edu

Jacki Landon
Ezekiel Baied
ATG, a Cognizant Company
Missoula, MT 59801, USA
jacki.landon@cognizant.com, ezekiel.baied@cognizant.com

ABSTRACT

The adoption of enterprise-wide systems like Customer Relationship Management (CRM) systems continues to grow globally. Due to the prevalence of CRM software in businesses and CRM's expected growth, Information Systems (IS) graduates will likely interact with a CRM system in their careers. However, learning enterprise systems like CRM is challenging for students due to the complexities surrounding integrating people and processes around a technology platform. This paper illustrates how an information systems course employs a CRM project using an experiential learning approach to help IS students develop functional and technical knowledge of CRM and discover creative ways to solve business problems using Salesforce. Project details, exercises, and lessons learned from previous project implementations are provided. Results of students' assessments indicate the hands-on Salesforce CRM project can lead to improved functional and technical learning outcomes.

Keywords: Customer relationship management (CRM), Salesforce, Experiential learning & education, Business processes

1. INTRODUCTION

The use of enterprise-wide systems like Customer Relationship Management (CRM) systems continues to grow globally. The CRM market accounted for $61 billion globally in 2021 and is expected to grow to $170 billion globally by 2030 according to Precedence Research (GlobeNewswire, 2022). Salesforce, one of the global leaders in this space, describes CRM as a technology for managing a company's relationships and interactions with customers and potential customers (Salesforce, 2021). Due to the prevalence of CRM software in businesses and CRM's expected growth, Information Systems (IS) graduates will likely interact with a CRM system in their careers. Therefore, it is essential that IS students are exposed to a CRM system, or any large enterprise systems, during their education. A CRM analyst will need business, marketing, and information systems knowledge. Many IS programs offer CRM subjects in their courses that mainly focus on configuration, middleware, customization, and business architecture, but may not adequately cover CRM fundamentals (Lokuge et al., 2020). To address this gap, IS students should be exposed to a CRM system that incorporates configuration, customization, and the fundamental business knowledge required for a successful CRM solution.

Learning CRM in a classroom setting is challenging, as most students do not have the industry experience to fully understand the complexities of a large enterprise system. To understand CRM, students must comprehend the different technologies that companies might use, the people and teams that will be using the technology, and the downstream business

processes that depend on CRM data. We have built a project in an attempt to enhance students' learning of what a CRM system is and how a CRM can solve business problems. For the last several years, we have incorporated this into a required IS undergraduate course. As part of these efforts, each student group was given a set of business requirements and use cases. The students were tasked with solving business problems using Salesforce. The outcome of this project is a working Salesforce CRM solution that each student group delivered to a panel of judges. We believe this CRM project provides immense learning opportunities for our students by enabling them to collaborate with industry experts, think critically and creatively to solve business problems and understand the demands of the industry. This paper presents our experience in employing the Salesforce project using an experiential learning approach in an undergraduate IS course.

2. LITERATURE REVIEW

2.1 Teaching Enterprise Systems

Enterprise systems typically include Enterprise Resource Planning (ERP), Supply Chain Management (SCM), and Customer Relationship Management (CRM). As ERP system usage has grown since the 1990s, educators have put much of effort into integrating ERP into the business curriculum. Illustrative examples include the incorporation of role-play exercises (Shen et al., 2015), case studies (Hajnal & Riordan, 2004), hands-on exercises (Ayyagari, 2011; Pridmore et al., 2014), and simulation games (Maloni et al., 2012; Saraswat et al., 2014). Despite the large number of pedagogical practices on integrating ERP into IS curricula, a gap exists on how to introduce the customer business processes into enterprise systems using experiential learning opportunities. ERP manages procurement, production, distribution, and fulfillment processes but primarily focuses on financial data. However, the central promise of CRM is to help businesses build a customer data repository by tracking all customer-related processes. Therefore, integrating ERP into the curriculum does not fully address the industry needs for CRM training and education. As the largest software market in the world, CRM powers businesses with relevant customer insights and data, making it the heart of every growing business (Super Office, 2022). Given the popularity of CRM, students equipped with CRM fundamentals are more marketable for a variety of industries.

To fill this gap in the current pedagogical research, we design a hands-on project to develop students in the fundamentals of customer business processes and solve business problems using CRM. As the number one CRM company in the world, Salesforce has served more than 150,000 companies, and 99 of Fortune 100 brands are using Salesforce CRM. Therefore, Salesforce should be the optimal CRM software for students to learn (Fonseca, 2019).

2.2 Experiential Learning Pedagogy

Experiential learning is an effective and long-lasting form of learning where learners create a meaningful learning experience (Beard & Wilson, 2006). Within the IS field, extant research found that experiential learning can result in a higher level of comprehension of knowledge, help in translating knowledge into skills, and achieve lifelong learning outcomes (Croes & Visser, 2015). Jewer and Evermann (2015) show the benefits of experiential learning with open-source ERP systems to teach enterprise systems and business process management in undergraduate business courses. Their research indicates that there are increases in student understanding, engagement, and learning for the IS course. Bliemel and Ali-Hassan (2014) used Intel's flash-based game "IT Manager 3" as an experiential learning tool in online IS classes. They found the experiential learning experience helped students reflect on and apply several IT management theories. Croes and Visser (2015) examined the learning outcomes of the Google Online Marketing Challenge including the direct technical skills and life skills. The study achieved learning outcomes in the following areas: digital technical skills directly related to course and challenging content, interpersonal life skills (self-awareness, reflection, and strategic planning), and adaptive applied skills.

An effective learning strategy involves four stages: experiencing, reflecting, thinking, and acting (Kolb, 2014). In the experience stage, learners are exposed to a new task and actively engage in an experience (Kolb, 2014). The Salesforce CRM project offers students an opportunity to learn portions of the Salesforce platform by completing free Salesforce tutorials. In addition, students will use the Salesforce platform to solve real business problems, which requires active engagement.

In the reflective observation stage, learners reflect on the task or activity they experienced in the previous stage (Kolb, 2014). During the Salesforce CRM project, each group needs to turn in weekly status reports, in which they reflect on what they have achieved in the past week and what they plan to do in the following week. Through the weekly one-on-one meeting with the instructor, students discuss their project experiences with the instructor to identify any discrepancies between their understanding and the experience itself.

In the thinking stage, learners form new ideas or alter their current understanding based on the reflections from the previous stage (Kolb, 2014). Based on the feedback from the weekly status reports and discussions with the instructor, students can enhance their understanding of Salesforce CRM and adjust their technology solutions.

In the acting stage, learners plan or try out what was learned in previous steps by applying it to new experiences (Kolb, 2014). The last task in the CRM project is to present the CRM solution to mock-clients. The student groups present their solution while playing the part of real-world consultants. The mock-clients treat them as industry professionals, and they are questioned on their solution, knowledge of CRM fundamentals, and approach to the Salesforce CRM project.

We believe the Salesforce CRM project offers a unique experiential learning opportunity with critical advantages that cannot easily be accomplished with traditional pedagogical methods. The Salesforce CRM project designed in this class requires students to work with a local industry partner (i.e., ATG, a Cognizant Company) to solve problems, make decisions, build a Salesforce CRM solution, and present the solution to a panel of industry experts. ATG, a Cognizant Company, is a leader in Quote to Cash solution services to both commercial and large enterprise brands. Specifically, our industry partner focuses on supporting clients in a wide range of industries but has a focus on the Communications, Media, & Technology (CMT), Manufacturing, Logistics, Energy, & Utility (MLEU), and Healthcare & Life-Sciences (HLS). This project resides in the high-tech sector, falling in the "T" of CMT. To the best of our knowledge, CRM-related teaching cases are rare, as incorporating CRM in a course is challenging

due to the complexity of popular CRM platforms and students' lack of user experience of CRM (Kinnett & Steinbach, 2021). Therefore, to fill this research gap, this study seeks to capture student learning outcomes related to building a Salesforce CRM system in the classroom.

3. PROJECT DETAILS

3.1 Course and Department Learning Objectives

The course in which this project is implemented is titled Information Infrastructure. The course is a required class for all IS majors and the purpose of the course is to explore the evolution of technological infrastructures with an emphasis on strategic implications. Some of the learning objectives for the course and IS majors include 1) identifying business challenges and creatively applying technology to solve problems, 2) understanding the role of enterprise systems, 3) examining technologies that allow for the design and development of products and services in a global business environment, 4) integrating business knowledge, 5) communicating effectively, and 6) utilizing problem-solving skills.

Project Phase	Timeline (in terms of a 15-week semester)	Course and department learning objectives
Salesforce Trailhead	Weeks 2 - 9	• Understand the role of enterprise systems • Examine technologies for a global environment
Business requirements and use cases	Week 10	• Identify business challenges & apply technology to solve problems • Understand the role of enterprise systems • Integrate business knowledge
Develop Salesforce solution	Weeks 10 - 14	• Identify business challenges & apply technology to solve problems • Examine technologies for a global environment • Integrate business knowledge • Problem-solving
Weekly status meetings	Weeks 10 - 14	• Integrate business knowledge • Communication
Present solution to client	Week 15	• Integrate business knowledge • Communication • Problem solving

Table 1. Project Timeline and Learning Objectives

The Salesforce project involves several phases throughout the semester which include completing a list of Salesforce Trailheads, understanding business requirements and use cases, developing a custom Salesforce CRM solution, communicating project status, and finally presenting the solution to clients. To clarify, the Salesforce project, including the Salesforce Trailhead, only represents thirty-five percent (35%) of the total course grade. The remaining sixty-five (65%) percent consists of exams, problem-solving assignments, and class participation. Table 1 summarizes the project phases, a suggested timeline, and the learning objectives tied to the specific phases.

3.2 Student Prerequisite Knowledge

The Salesforce CRM project requires students to have background business knowledge as well as foundational IS knowledge and is therefore placed into a junior-level class. For students to maximize their learning of CRM people, processes, and technologies, we required all students to have already taken the Introduction to Marketing course and the Introduction to IS course. The introduction to a marketing course gives the students a high-level view of the customer lifecycle and the introduction to IS course introduces the basic concepts of business requirements and use cases. Approximately half of the class consisted of seniors, and the other half were juniors. At this time in a student's academic career, senior students had taken the systems analyses and design course and had a much deeper understanding of what use cases were. The juniors in the course might not have had a complete understanding of what use cases were, but working in instructor-assigned groups helped alleviate this problem. Seniors mentored the juniors on missing prerequisite knowledge. As a note, the rationale for intermingling seniors and juniors is purely a departmental/college constraint and not a pedagogical requirement.

3.3 Salesforce Trailhead

The starting point for the Salesforce CRM project is to understand the basics of the Salesforce CRM system. Salesforce has a steep learning curve, especially for students who are not exposed to enterprise systems. Fortunately, Salesforce offers free online training called Trailhead. According to Salesforce, Trailhead is home to a wide variety of learning topics that are organized into modules, which are broken up into units. Users can work through a Trail, which is a collection of modules, or they can choose the modules they are most interested in (Trailhead, 2022).

Salesforce offers several hundred modules. We worked collaboratively with our industry partner to organize a custom list of Salesforce modules called a Trailmix. Our Trailmix consisted of seventeen modules. We selected fourteen modules that provide training directly relating to the specific project requirements. The remaining three modules (i.e., Salesforce Career Exploration, Career Development Planning Basics, and Public Speaking Skills) are universal skills for all students interested in careers in CRM, enterprise systems, or business in general. The complete list of modules assigned and how students sign up for a Salesforce trailhead account is listed in Appendix A.

In order to not overwhelm the students at the end of the semester, we assigned two modules per week for the eight weeks prior to introducing the project. To track completion, we required each student to submit a screenshot of their completed modules. We realized that students could cheat by submitting a

peer's screenshot, but we constantly reminded the students that it would only hurt them once they started working on the project. We estimated that students averaged about an hour for each module. However, each module contained an average time to complete that has been defined by Salesforce. We did not assign any additional class assignments besides the Trailmix throughout the semester. We hoped this allowed the students to spend the proper time on the modules without the burden of other class assignments.

3.4 Understanding Business Requirements and Use Cases

Although the project involved configuring and developing a Salesforce solution, the goal of the project was more than just building a technology platform. We wanted to frame the project in terms of the course learning objectives, specifically identifying business challenges and applying technology to solve problems. We believe this framing allowed students to understand the role of enterprise systems and not get too deep in the Salesforce technical knowledge. This also allowed the students to discover creative ways to solve the business problems in Salesforce, and subsequently, no two solutions were the same.

The section below contains excerpts from the project that are introduced to the students after they complete the Trailmix. The complete project, including the specific requirements and use cases, is described in Appendix B.

Business Story: We are Ace Systems, a new up-and-coming provider of subscription-based security software. Our company is in the process of growing and is battling with some internal processes that were never designed to scale. As we bring in new business, our organization is having trouble maintaining consistency and visibility into all areas of the business (Marketing, Selling, Provisioning, Billing, Collections, Customer Care, etc.), with a high level of concern in our selling process. We are having issues tracking, defining, and determining which leads to pursue as actual opportunities. Additionally, we are having trouble capturing a lead's account information in one coherent place. This creates issues with provisioning our products, billing for those products, and giving our Customer Service Representatives insight into how to handle a specific customer's needs.

Ace Systems has just hired a new Lead Generation Rep whose role is to travel around to Expo shows to gather and collect potential customer information through the scanning of Expo badges. Over the past six months, our Lead Generation Rep has collected more than 500 leads and has sent them to our regional sales teams via email. This process is not a scalable solution, and we are looking to implement a solution that automates this process. We have two regional sales reps in charge of different territories. Incoming leads (e.g., emails from the Lead Generation Rep) are currently selected by each sales rep on a first-come, first-serve basis. To encourage strong distributor relationships, we would like the new system to help each sales rep focus on pursuing leads within their assigned territory without having to sift through countless emails and attachments.

Along with the format of the leads, our sales team has also explained to us that they are having issues qualifying leads. The lead qualification process has created frustration between our sales reps, where occasionally, one is left with all bad or dead leads. With so many leads coming in, we would like to make sure the new system supports our sales reps in only pursuing opportunities that come from qualified leads.

Through large growth, the number of accounts that our reps are pursuing is exponentially growing, and our Management Team has no visibility into past and future pursuits. Therefore, Management lacks the ability to plan and make decisions on future growth projections. Another pain point of our sales team is that information on accounts is gathered in a variety of formats (Excel, Word, Notepad, napkins, etc.). This leads to inaccurate information on employee count, business locations, and annual revenue (all critical pieces of information we track for our selling process).

The pain points we've experienced during growth have led us to purchase Salesforce Sales Cloud. We believe this application will help automate our selling processes and establish a single source of truth for lead, opportunity, account, and contact data. We are engaging with your consulting team to prove that these issues we've been having can be solved. We expect you to work together, address the issues we've presented, and provide a solution to the problem. Below, you are given a set of use cases to highlight various objects in Salesforce. Your role in this project is to digest the issues presented above coupled with the use cases highlighted below (see Appendix B) and create a working Proof of Concept (POC) in Salesforce so that we can get a better idea of how our reps will interact with the application.

As described above, the project was framed through a fictitious company called Ace Systems. Ace Systems operates in the security software industry. Through our College of Business alumni and recruiting channels, we invited guest speakers to introduce the project representatives from Ace Systems. The actors guided the students through the business problems they were facing related to their CRM process and the specific requirements they were hoping to solve using Salesforce.

3.5 Weekly Status Meetings

We required each group to turn in a status report every week. The status report included a Gantt chart, tasks accomplished last week, tasks to be accomplished the upcoming week, and a risk/issue log. The self-assigned project manager for each group had to meet with the instructors one-on-one in class once a week to present their status.

3.6 Presenting the Solution to Clients

We invited alumni and representatives from our industry partners to return at the end of the semester for the project presentations. They judged the presentations based on a rubric that was shared with the students (see Appendix C). The presentations gave the students an opportunity to present their solutions to industry experts acting as Ace Systems employees. The presentations also allowed us to assess the integration of business knowledge, communication skills, and problem-solving skills. The student presentations also gave our industry partners a chance to identify and recruit high performers from the class.

3.7 How to Set Up the Salesforce Environment

Salesforce provides free, cloud-based developer environments with two users for each environment. Each group set up one Salesforce development org that was shared among the team members. One group member was in charge of setting up the

environment and maintaining the two default users, including passwords within the environment. Instructions on how to set up the environment can be found in Appendix A.

4. LESSONS LEARNED AND CONTINUOUS IMPROVEMENT

We have completed some variations of the Salesforce CRM project for the past six years. We received feedback from students and our industry partners each semester and modified the project accordingly. The major changes to the project over time involved modifying the schedule, evaluating how much hands-on Salesforce technical knowledge is needed by the instructors, and instituting weekly status reports.

When we first started the project, we had students complete the Salesforce Trailmix when the project was introduced. The students were required to complete the entire Trailmix (which averaged about seventeen hours) while digesting the business requirements, setting up an environment, configuring the solution, and working as a new team. We realized this was too much for undergraduate students to handle at once. Therefore, we assigned the Trailmix over regular intervals throughout the semester prior to the project being introduced. Students could learn Salesforce throughout the first eight weeks of the class at their own pace. By doing this, we discovered students had a better understanding of Salesforce when the project started. This allowed the groups to concentrate on the business problems instead of how Salesforce technically worked at the beginning of the project. Given a normal 15-week semester, we assigned the Trailmix weeks 2 - 9 with two modules due each week. Our last lecture and exam concluded at the end of week 9. We introduced the project, business requirements, and use cases during week 10. Weeks 10-14 of the semester were dedicated solely to the project. We used class time for working sessions and status meetings and our industry partner hosted two hours of office hours every other week for our students. Although five weeks may not appear to be enough time for undergraduate students to complete a project of this magnitude, we discovered every group was able to finish the project in the timeframe. In addition, we did not hold a traditional class during the final five weeks of the semester. Therefore, students had three hours a week dedicated to working on the project using class time. The time outside of class that normally would be dedicated to assignments or studying for exams was freed up to work on the project.

Finding the optimal balance between teaching IS concepts and teaching applications is always difficult. Just applying a solution in Salesforce might not get to the core of actual business problems for a company. The first nine weeks of the fifteen-week semester are dedicated to identifying business challenges, applying technology to solve problems, and understanding the role of enterprise systems. Instead of a textbook, we use current articles and whitepapers from sources like Wired, Harvard Business Publishing, Gartner, and Deloitte (e.g., Choudary, 2014; Deloitte Digital, 2019; Spradlin, 2012). We try to strike a balance between teaching theories and frameworks. After years of fine-tuning the course calendar, we discovered the first nine weeks are enough to cover the IS content, and the remaining weeks can be dedicated to hands-on learning. See Table 1 for the project timeline.

Another lesson learned over the past several years was how much Salesforce expertise the instructor needs to lead the project. During our first iteration, we assumed that the instructor needed a deep skillset in Salesforce. We discovered this was not the case. There is ample training through Salesforce Trailhead and a robust online user community of Salesforce users. Part of the learning experience for the students was to take vague business use cases and solve them using Salesforce. We discovered the more the students perceived the instructor as a Salesforce expert, the more the students relied on the instructor for answers. We believe this defeats the purpose of experiential learning where students are encouraged to solve their own problems to prepare them for the demands of industry. Instead of directly answering students' Salesforce technical questions, the instructors pushed back on the students with questions like, "What are you trying to solve?", "What solutions have you tried?", and "Where have you searched for the solution?". The instructor played the role of a high-level IT manager with a rudimentary understanding of Salesforce. Once students realized the instructors were not answering any technical Salesforce questions, then the students became more independent in finding solutions that work. We believe this is a critical skill set for anyone going into the IS field. This also alleviated the need for the instructor to know Salesforce in-depth.

It is important to highlight that Salesforce does have a learning curve as evidenced by the large amount of free online training in the Salesforce Trailheads. This learning curve is not trivial and will require both the instructor and the students to complete the assigned Trailheads. After observing students work on the project over the past several years, we discovered reoccurring issues in student learning. The first issue was the students forgot the detailed training from Salesforce Trailheads. The Trailheads are prescriptive with step-by-step instructions. When the students tried to configure Salesforce to solve the actual business requirements provided by the mock-client, they forgot some of the technical procedures in Salesforce. We found it useful and encouraged students to document the learning objectives of each assigned Trailhead as they were completed. During the project, if a student struggled with a technical procedure in Salesforce, the instructors encouraged students to go back and revisit specific modules to address their knowledge deficiency in that specific area. Documenting the Trailhead learning objectives provided a table of contents for students to quickly reference to find their technical issues.

The second issue for students was realizing there is not one correct answer or way to implement a business requirement. Each business requirement could be interpreted in several different ways, which led to different solutions across team members and between groups. Our undergraduate students struggled with this concept. The instructors reminded the students this was common in industry and that they would encounter this situation throughout their careers.

The last lesson learned was instituting weekly status report meetings. To enhance the student experience, it would be ideal for the students to present their status to the client directly. However, scheduling conflicts with our local industry partners prevented this from happening on a regular basis. There was a major improvement in the project once we implemented the mandatory status report. We believe students understood the project scope better and understood the tasks that needed to be accomplished in the timeline. After implementing the status report requirement, anecdotal evidence showed that students started preparing for their presentations earlier and some groups

even had time to practice their presentations in front of the instructors.

5. DATA ANALYSES, RESULTS, AND DISCUSSION

This project was part of a junior-level, required IS class titled Information Infrastructure. The project was worth 35% of the total course grade. Of that 35%, 75% of the project grade was the delivery of functionality in Salesforce based on the business requirements, and 25% was the presentation to the clients. After final grades were submitted for the semester, we asked students to complete a short questionnaire anonymously.

We asked students to rate statements on a 5-point Likert scale. Statements that received the highest means were "the project helped me understand what an enterprise system is and how it works," "the project improved my understanding of business challenges," and "the project allowed me to demonstrate how to add new features (such as customized reports, and mobile functionality) to the CRM system" with means of 4.14, 4.16, and 4.27, respectively. Other statements like "the project improved my understanding of the low-code environment side of an enterprise system," "the project was reasonable and useful," and "the project gave me a good awareness of the potential of CRM solutions" had means 4.0, 3.86, and 4.0, respectively.

In addition to the survey, we collected text from anonymous student comments from the official university course evaluations. The student comments are from the latest semester we offered the course. Some of the positive comments include, "getting to demonstrate our knowledge to industry professionals in an undergraduate setting was pretty mind-blowing," and "applying what we learned about Salesforce to a final project that was similar to how a real work project with a client would be (it didn't feel like a school project but a work project, which I think was a great way to both tie in what we learned and prepare us for our careers)." Not surprisingly, there were several negative comments about the project experience, and they were all related to the amount of work needed to complete the project, given the short timeframe. Some of the direct comments include: "more time for the final project. I feel more effort could be put into the final if groups had more time," "one or two additional weeks for the Salesforce project would have been very nice – a little more time to really polish the presentations," and "the salesforce project at the end of the year was tough with the amount of time allowed and the lack of help that was intuitive for that project."

The results of the course evaluations were not surprising. We believe every student wanted more time on the project. We also believe the timeframe of the project was sufficient given the scope of the work and the timeframe helped set expectations of what industry demands.

We will continue to assign this project in future semesters. We believe students gained time management skills, project risk management skills, understanding the Salesforce platform, understanding business requirements, working with clients, handling client demands, presentation skills, teamwork, and leadership experience. They also learned how to handle difficult questions in front of a large room of their peers and real industry leaders. Another advantage for students is they can use the experience gained from the project for future job interviews. Students can demonstrate how they handled real business requirements and provided solutions to mock clients. We will continue offering this project in future semesters and continue to improve on the project.

6. CONCLUSION

Understanding the role of enterprise systems in businesses is a hard concept for most undergraduate students. Experiential learning techniques like developing a Salesforce solution for a business are an effective approach to help students understand the role of enterprise systems in an organization. However, students first need to understand how to identify business challenges and understand how applying technology can solve these business problems. Just assigning a Salesforce implementation project without understanding the business problems misses the point of applying technology to solve business problems. One of the biggest takeaways from continually improving the project is striking the balance between delivering content and applying hands-on experience. Through several years of using a continuous improvement cycle, we believe we have found the correct product to achieve our learning objectives. This final product includes the first nine weeks of content, lectures, activities, exams, and Salesforce Trailheads. The remaining weeks of the semester are dedicated to understanding fictitious companies' business problems and building a Salesforce solution to address these problems. We hope that other IS instructors can use this project, timeline, or sections of the project in their courses.

7. REFERENCES

Ayyagari, R. (2011). Hands-on ERP Learning: Using OpenERP®, an Alternative to SAP®. *Journal of Information Systems Education*, 22(2), 123-134.

Beard, C. M., & Wilson, J. P. (2006). *Experiential Learning: A Best Practice Handbook for Educators and Trainers.* Kogan Page Publishers.

Bliemel, M., & Ali-Hassan, H. (2014). Game-Based Experiential Learning in Online Management Information Systems Classes Using Intel's IT Manager 3. *Journal of Information Systems Education*, 25(2), 117-124.

Choudary, S. P. (2014, August 7). A Platform-Thinking Approach to Innovation. *Wired Magazine*. https://www.wired.com/insights/2014/01/platform-thinking-approach-innovation/

Croes, J. & Visser, M. (2015). From Tech Skills to Life Skills: Google Online Marketing Challenge and Experiential Learning. *Journal of Information Systems Education*, 26(4), 305-316.

Deloitte Digital. (2019). *Digital CRM 2.0 Building Customer Relationships in the Digital Landscape.* https://www2.deloitte.com/content/dam/Deloitte/us/Documents/CMO/us-deloitte-digital-crm-study-2.0-2019.pdf

Fonseca, M. (2019, April 23). *The CRM Battlefield: Salesforce 20-Year Throne*. Stellaxius Knowledge Center, Stellaxius. https://stellaxius.com/knowledgecenter/salesforce/the-crm-battlefield-salesforce-20-year-throne/

GlobeNewswire. (2022*). Customer Relationship Management Market Size to Surpass USD 170 BN by 2030*. https://www.globenewswire.com/en/news-release/2022/05/16/2444086/0/en/Customer-Relationship-Management-Market-Size-to-Surpass-USD-170-BN-by-2030.html

Hajnal, C., & Riordan, R. (2004). Exploring Process, Enterprise Integration and E-Business Concepts in the Classroom: The Case of PetPRO. *Journal of Information Systems Education*, 15(3), 267-276.

Jewer, J., & Evermann, J. (2015). Enhancing Learning Outcomes through Experiential Learning: Using Open-Source Systems to Teach Enterprise Systems and Business Process Management. *Journal of Information Systems Education*, 26(3), 187-201.

Kinnett, S. J., & Steinbach, T. A. (2021). A Case Study in the Use of a Gamified Learning Platform to Teach a Course in CRM Implementation. *Americas Conference on Information Systems Proceedings 2021*, article no. 17. https://aisel.aisnet.org/amcis2021/is_education/sig_education/17

Kolb, D. A. (2014). *Experiential Learning: Experience as the Source of Learning and Development*. FT press.

Lokuge, S., Sedera, D., Ariyachandra, T., Kumar, S., & Ravi, V. (2020). The Next Wave of CRM Innovation: Implications for Research, Teaching, and Practice. *Communications of the Association for Information Systems*, 46(23), 560-583. https://doi.org/10.17705/1CAIS.04623

Maloni, M., P. Dembla, & J.A. Swaim. (2012). A Cross-Functional Systems Project in an IS Capstone Course. *Journal of Information Systems Education*, 23(3), 283-296.

Pridmore, J., Deng, J., Prince, B., & Turner, D. (2014). Enhancing Student Learning of ERP and Business Process Knowledge with Hands-on ERP Exercises. *The Southern Association for Information Systems 2014 Proceedings*, article no. 31. https://aisel.aisnet.org/sais2014/31

Saraswat, S. P., Anderson, D. M., & Chircu, A. M. (2014). Teaching Business Process Management With Simulation in Graduate Business Programs: An Integrative Approach. *Journal of Information Systems Education,* 25(3), 221-232.

Salesforce. (2021). *What Is CRM?* https://www.salesforce.com/crm/what-is-crm/

Shen, Y., Nicholson, J., & Nicholson, D. (2015). Using a Group Role-Play Exercise to Engage Students in Learning Business Processes and ERP. *Journal of Information Systems Education*, 26(4), 265-280.

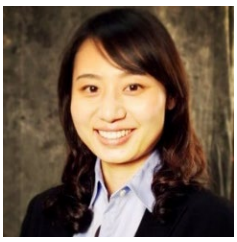
Spradlin, D. (2012). Are You Solving the Right Problem? *Harvard Business Review*, 90(9), 84-93.

Super Office. (2022, October 20). 18 CRM Statistics You Need to Know for 2023. https://www.superoffice.com/blog/crm-software-statistics/

Trailhead. (2022). Salesforce Platform Basics. https://trailhead.salesforce.com/content/learn/modules/starting_force_com

AUTHOR BIOGRAPHIES

Jason Triche is the Poe Family Distinguished Faculty Fellow and an associate professor of MIS at the University of Montana. He received his Ph.D. in ISQS from the Rawls College of Business at Texas Tech University. He earned his B.S. in ISDS from Louisiana State University. Triche has ten years of industry experience in technology and management consulting and holds a PMP. His current research interest includes data analytics and pedagogy in enterprise systems.



Tianxi Dong is an associate professor of business analytics and technology at Trinity University. She earned her B.S. and M.S. in Management Information System (MIS) from Shanghai University of Finance and Economics. She received her Ph.D. in ISQS from the Rawls College of Business at Texas Tech University. She has published in the *International Journal of Information Management*, *Industrial Management & Data Systems*, *Communications of the Association for Information Systems*, *Journal of the American Society for Information Science and Technology*, and *Journal of Information Systems Education*. Her current research interests include business value of IT, user-generated content, and information system security.

Jacki Landon received her B.S. in Management Information Systems from the University of Montana in 2017. She has a passion for education and working with students. She spent over five years as a Senior Consultant with ATG, a Cognizant Company. Throughout this time, she supported the MIS department and the Information Infrastructures professors by teaching Salesforce and industry best practices to students.

Ezekiel "Zeke" Baied was born in Boulder, Colorado but grew up in Missoula, MT, and comes from a family of Argentine immigrants. Zeke holds a B.S. in Business Administration and International Business and a Masters of Business Administration from the University of Montana School of Business. Zeke has been a part of ATG, a Cognizant Company since 2013 and has established himself as a Quote to Cash Consulting Expert with over 9 years of experience in Quote to Cash consulting and 7 years in the Salesforce Ecosystem. He has also been fortunate enough to participate in international business in Europe and Latin America, and holds 6x Salesforce Certifications.

APPENDICES

Appendix A. Salesforce Trailheads and Signup Instructions

The following Trailheads were assigned to the students. They are listed in order of due dates:

- Salesforce Career Exploration
- Career Development Planning Basics
- Public Speaking Skills
- Salesforce Platform Basics
- Salesforce CRM
- Leads & Opportunities
- Account & Contacts
- Data Modeling
- Data Management
- Lightening Experience
- Salesforce Mobile
- Chatter
- Formulas & Validations
- Quick Start: Process Builder
- Flow Basics
- Einstein Basics
- Sales Cloud Einstein

Signup Instructions:

1. Open internet browser and navigate to the following URL:
   https://developer.salesforce.com/signup
2. Fill in the required information
   a. First Name
   b. Last Name
   c. Email (Be sure to use your personal email address to maintain Salesforce badges post-graduation)
   d. Role (Select Developer)
   e. Company (Enter University Name)
   f. Country
   g. Postal Code
   h. Username
   i. Check the box to agree to the terms and conditions
3. Click Sign me up
   a. Open email account for the email address you provided and open the new email from Salesforce
   b. Click on the link provided in the email body to verify the account
   c. Create a password for your account and click Save
   d. Navigate to the following URL:
   https://login.salesforce.com/
   Log in

Appendix B. Full Project Details

Final Project: Building a Technology Solution in Salesforce

Assignment Details
The final Salesforce.com (SFDC) project is a team assignment where your group will be tasked with completing a demonstration of an end-to-end CRM solution, selling your team as the best Systems Integrator (SI). In this assignment your group will need to complete the following:

1. Read Through Entire Final Project Document
2. Assign Roles to Group Members
3. Understand the Use Cases
4. Analyze Business Needs Presented in Story & Expand on Use Cases
5. Configure Salesforce to Meet Business Requirements
6. Upload headshot to LMS
7. Pitch Your Solution and Expertise to the client
8. Complete peer evaluation

Business Story
We are ACE Systems, a new up-and-coming provider of subscription-based security software. Our company is in the process of growing and are battling with some internal processes that were never designed to scale. As we bring in new business, our organization is having trouble maintaining consistency and visibility into all areas of the business (Marketing, Selling, Provisioning, Billing, Collections, Customer Care, etc.), with a high level of concern in our selling process. We are having issues tracking, defining, and figuring out which leads to pursue as actual opportunities. Additionally, we are having trouble capturing a lead's account information in one coherent place. This creates issues with provisioning our products, billing for those products, and giving our Customer Service Representatives insight into how to handle a specific customer's needs.

Selling Process Issues
1. Distribution of Incoming Leads:
ACE has just hired a new Lead Generation Rep whose role is to travel around to Expo shows to gather and collect potential customer information through the scanning of Expo badges. Over the past six months, our Lead Generation Rep has collected more than 500 leads and has sent them to our regional sales teams via email. As you can see, this process is not a scalable solution, and we are looking to implement a solution that automates this process.
2. Assignment of Leads:
We have two regional sales reps in charge of different territories. Incoming leads (e.g., emails from the Lead Generation Rep) are currently selected by each sales rep on a first come, first serve basis. To encourage strong distributor relationships, we would like the new system to help each sales rep focus on pursuing leads within their assigned territory without having to sift through countless emails and attachments.
3. Qualifying Leads:
Along with the format of the leads, our sales team has also explained to us that they are having issues qualifying leads. The lead qualification process has created frustration between our sales reps where occasionally one is left with all bad or dead leads. With so many leads coming in, we would like to make sure the new system supports our sales reps in only pursuing opportunities that come from qualified leads.
4. Tracking of Accounts:
Through large growth, the number of accounts that our reps are pursuing has exponentially grown and our Management Team has no visibility into past and future pursuits. Therefore, Management lacks the ability to plan and make decisions on future growth projections.
5. Defining Account Information from Opportunity Pursuit
Another pain point of our sales team is that information on accounts is gathered in a variety of formats (Excel, Word, Notepad, napkins, etc.). This leads to inaccurate information on employees count, business locations and annual revenue (all critical pieces of information we track for our selling process).

Project Details
The pain points we've experienced during growth have led us to purchase Salesforce Sales Cloud. We believe this application will help automate our selling processes and establish a single source of truth for lead, opportunity, account and contact data. We are engaging with your consulting team to prove that these issues we've been having can be solved. We expect you to work together, address the issues we've presented, and provide a solution to the problem. Below, you are given a set of use cases to highlight various objects in Salesforce. Your role in this project is to digest the issues presented above coupled with the use cases highlighted below and create a working Proof of Concept (POC) in Salesforce so that we can get a better idea of how our reps will interact with the application. These are the roles we typically see on projects; however, we would like each of you to gain experience playing each of these roles throughout the project:
1. Project Manager (PM) – Oversee the project. Establish the scope of the project, create project milestones and ensure your team is on track. Make sure the project gets moving and reaches completion.

2. Business Analyst (BA) – Documents the requirements, work closely with the business to understand project needs and goals. Understand current issues and creates use cases.
3. Implementation Consultant (IC) – Lead configurator of the solution. Evaluates requirements and utilizes best practices when building solution to solve for the needs of the client. Configures Salesforce instance.
4. Quality Assurance Tester (QA) – Ensures that the solution is working as designed and works with the team to escalate issues and fix unexpected bugs. Tests Salesforce instance.

Use Cases
Mandatory Functionality
Lead
We need a way for our Lead Generation Rep to put all their leads into Salesforce as quickly as possible following an Expo.
Each lead needs to be automatically assigned to a sales rep in the corresponding region.
We would like our sales team to be required to track tasks associated to leads and to contact the lead prior to conversion into an account, contact, and opportunity.
We would like this to be reflected on the page's user interface (UI). We would like to prevent a Sales Rep from converting a Lead until contact has been made with the potential customer. Once an outbound call (task) has been logged by the sales rep, the page's UI should allow for the sales rep to manually convert the lead.
Account
We'd like to track company size and then determine whether it is an Enterprise or SMB. Typically, we consider an SMB any company with less than 1,000 employees.
We would like to see the account size reflected as either SMB or Enterprise, automatically, when an Account is created.
If the Account is an SMB, we would like the rep to fill out the Description, Type, and Shipping Address fields. The only available "Type" for an SMB Customer is "Customer-Direct".
If the Account is an Enterprise Account, we would like the rep to fill out all the fields listed above, plus the Billing Address, Website, and Industry fields.
We would like this difference to reflect on the page's UI. Is it possible to be creative in how these fields are represented on the page for an Enterprise vs. SMB
Contact
Each Contact must contain an email, phone number and title.
Must have the ability to associate more than one Contact to an Account.
Product
We have a set of products and prices that we would like to see uploaded. Can this be done using our product catalog spreadsheet?
In addition, we offer different list pricing based on the size of the account we are selling to. When a Sales Rep is working with an Opportunity, the correct list price should be shown for each product based on the product catalog spreadsheet and the applicable account size.
Opportunity
So that management can have visibility into all our open opportunities and how much in revenue they might generate, we need to define an amount per opportunity.
Products that a customer is interested in purchasing should be easily added and visible on the opportunity.
In addition to the products being on the opportunity, we'd like to be able to see the value of each specific product.
To assist sales reps in closing deals faster, we would like them to be able to automatically apply a 10% discount to licenses when they are able to sell a quantity greater than 100.
Mobile Use
So that sales reps can interact with the system from the field, they should have mobile access to the system.
Users should be able to log interactions with the customers using a mobile device (tablet & phones):
Log a successful call with a customer
Define details of an Account and/or Opportunity after a meeting
There are probably a few ways to do this, but we'll defer to your opinion on which is most the user-friendly way to do so. Can't we use the Salesforce app to do this?
Instant Messaging
We'd like for each new opportunity to be displayed to the ACE team at large. If there is group notification functionality we could utilize, that'd be great. We thought that this is what Chatter could be used for.
Reports, Charts, and Dashboard
Management would like to see examples of dashboards that are supported by Salesforce reporting functionality surrounding the performance of our reps (both Lead Generation and Sales). We would like to see reports that help us identify the following:
Total Leads, Unqualified and Qualified Leads, and Converted Leads
Sales Rep performance by region or industry as well as comparisons between Sales Reps
Other
What other opportunities are there on the Salesforce platform that ACE could leverage?

The mandatory requirements are to analyze and convey into a working POC in Salesforce. On the date of presentation, we would like you to demo your POC to show how our requirements are being met using Salesforce. You will be judged on these three factors: ability to demo mandatory requirements in Salesforce, ability to automate processes we didn't highlight in this document, and ability to speak towards requirements that were not outlined.

Appendix C. Rubric for Project Presentation

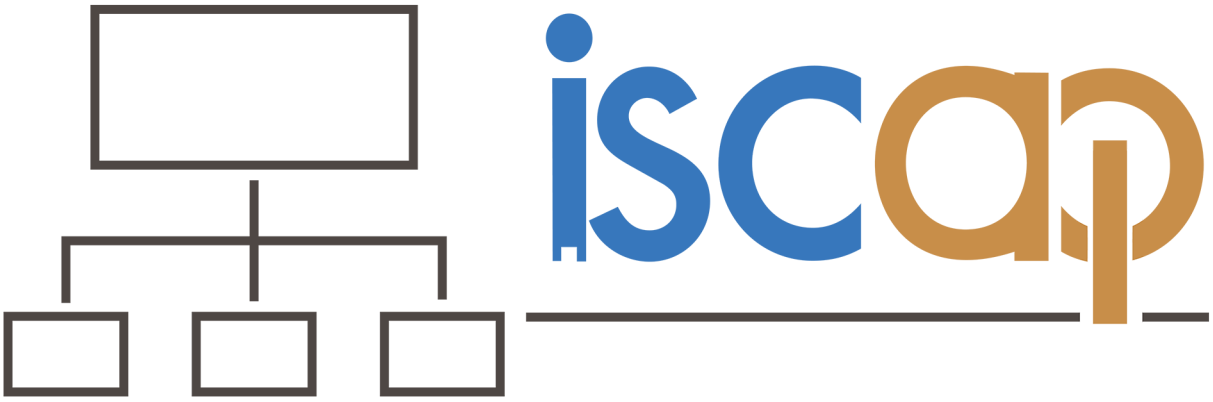
Final Project Evaluation Form

Section XX Group XX Group Members:

Name of Assessor:

	4	3	2	1
Business Requirements and Use Cases	Group demonstrates full understanding of business requirements and use cases. All requirements and use cases were addressed.	Group demonstrates full understanding of business requirements and use cases. Most requirements and use cases were addressed.	Group demonstrates basic understanding of business requirements and use cases. Some of requirements and use cases were addressed. Gaps exist.	Group demonstrates little understanding of business requirements and use cases. Few of the requirements and use cases were addressed. Major gaps.
Technical Implementation	Group demonstrates full working Salesforce solution for all requirements and use cases. Integration between requirements are seamless and/or automated.	Group demonstrates a working Salesforce solution for most requirements and use cases. Integration between requirements are addressed, but may require a manual workaround.	Group demonstrates a working Salesforce solution for some of requirements and use cases. Integration between requirements are addressed, but many require a manual workaround.	Group demonstrates a working Salesforce solution for few of the requirements and use cases. Integration between requirements are not addressed.
Delivery of Solution	Excellent grasp of public speaking. Clear enunciation, steady pace, and confidence. Speaker maintains eye contact. Seamless handoff between group members.	Good grasp of public speaking. Good enunciation, steady pace, and confidence. Speaker mostly maintains eye contact. Mostly seamless handoff between group members.	Average grasp of public speaking. Average enunciation, steady pace, and confidence. Speaker struggles maintaining eye contact. Handoff between speakers is clunky.	Poor grasp of public speaking. Poor enunciation, steady pace, and confidence. Speaker struggles maintaining eye contact. Handoff between speakers is non-existent.
Q&A – Client Questions	Group is able to confidentially handle client questions. All client questions are addressed.	Group is able to handle client questions. Most client questions are addressed.	Group struggles to handle client questions. Some of client questions are addressed.	Group cannot handle client questions. Few client questions are addressed.

INFORMATION SYSTEMS & COMPUTING ACADEMIC PROFESSIONALS



STATEMENT OF PEER REVIEW INTEGRITY

All papers published in the ***Journal of Information Systems Education*** have undergone rigorous peer review. This includes an initial editor screening and double-blind refereeing by three or more expert referees.

ISSN: 2574-3872 (Online) 1055-3096 (Print)