



TRANSFORMATIVE SOLUTIONS: CAMPUS COMPASS IMPLEMENTATION FOR STREAMLINED EDUCATION CONSULTANCY



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Intro to Business Problem

Study Solutions is a higher education consultancy firm that faces a significant roadblock in consulting students for educational destinations abroad. Its current reliance on manually researching university websites takes a longer time (on average, 2 hours for each student) to offer comprehensive solutions to students regarding admission requirements and scholarship opportunities. Other individual students and consultancy firms also face the same problem, as there is no comprehensive database available.

Proposed Solution

Therefore, we propose establishing a robust online database called Campus Compass (which will be a subsidiary of Study Solutions), featuring a dynamic database of admission and scholarship information for the top 600 universities worldwide. This database will be continuously updated through automated REST API integrations on Salesforce that will fetch data from university websites twice a year, ensuring accuracy and eliminating the need for 'manual research,' which is expected to save 60% of the average counseling period.

Benefits

Students and agencies will benefit from personalized search filters, interactive tools, and expert guidance. For Study Solutions, the benefits are substantial. Campus Compass will attract a wider student base, boosting revenue through individual and agency monthly or yearly subscriptions. The platform's comprehensive data and customizable user experience will build a strong brand reputation and differentiate Study Solutions from competitors. By streamlining the application process, we can solidify Campus Compass's position as a trusted database in global education consultancy. This is a scalable and sustainable solution with the potential to transform the international higher education market and capture a significant share of this growing market.

Key Drivers

The following are the key drivers of the Campus Compass Project.

- Comprehensive Database and Web-based UI
- Membership revenue
- API integration
- AI use for providing information regarding personalized acceptance rate, course recommendation and chatbot.

Scope of the Project

- The database will have information on the top 600 universities in THE World Ranking.
- Membership in the database service will be paid by the students applying to universities, by higher education consulting firms and by the universities.
- The database will include information relevant to new and transfer students
- Use of AI to provide comprehensive information regarding personalized acceptance rate, course recommendations and for the chatbot.

Out of Scope

Campus Compass will not include the following services at this time.

- It will not include universities that are not in the top 600.
- The database will not be accessible to members without a subscription.
- Campus Compass will not be involved in student documentation and visa processing.

Assumptions

- All the information required for the application/admissions will be available on the university's official website.
- The database will be utilized by students and other consultancies.
- API will be able to fetch and update all the information from the university websites automatically at least two times a year.
- Salesforce Education Cloud would be a scalable solution for the future.

Key Stakeholders

The following are the key stakeholders of the Campus Compass.

- Study Solutions Management
- Campus Compass Project Team
- Students and higher education agencies
- Data integration team
- Salesforce representative

Current vs Future State

Process Stage	Current State (As-Is)	Future State (To-Be)
Initial Inquiry	Student contacts Study Solutions through various channels.	Student uses Campus Compass search interface directly.
University Research	Consultant manually researches university websites and databases.	Campus Compass API automatically fetches and updates data.
Scholarship Search	Consultant searches external scholarship databases.	Scholarships integrated into Campus Compass based on student criteria.
University Selection	Consultant recommends universities based on manual research and student input.	Student narrows down options through platform filters and suggestions.
Application Guidance	Consultant provides application support via email or phone calls.	Consultant available within the platform for personalized guidance.
Communication & Tracking	Communication via email and phone calls, information scattered across emails and notes.	All interactions tracked and centralized within Salesforce CRM.

Use of AI

In Campus Compass, artificial intelligence (AI) plays a pivotal role in enhancing the user experience through three key activities.

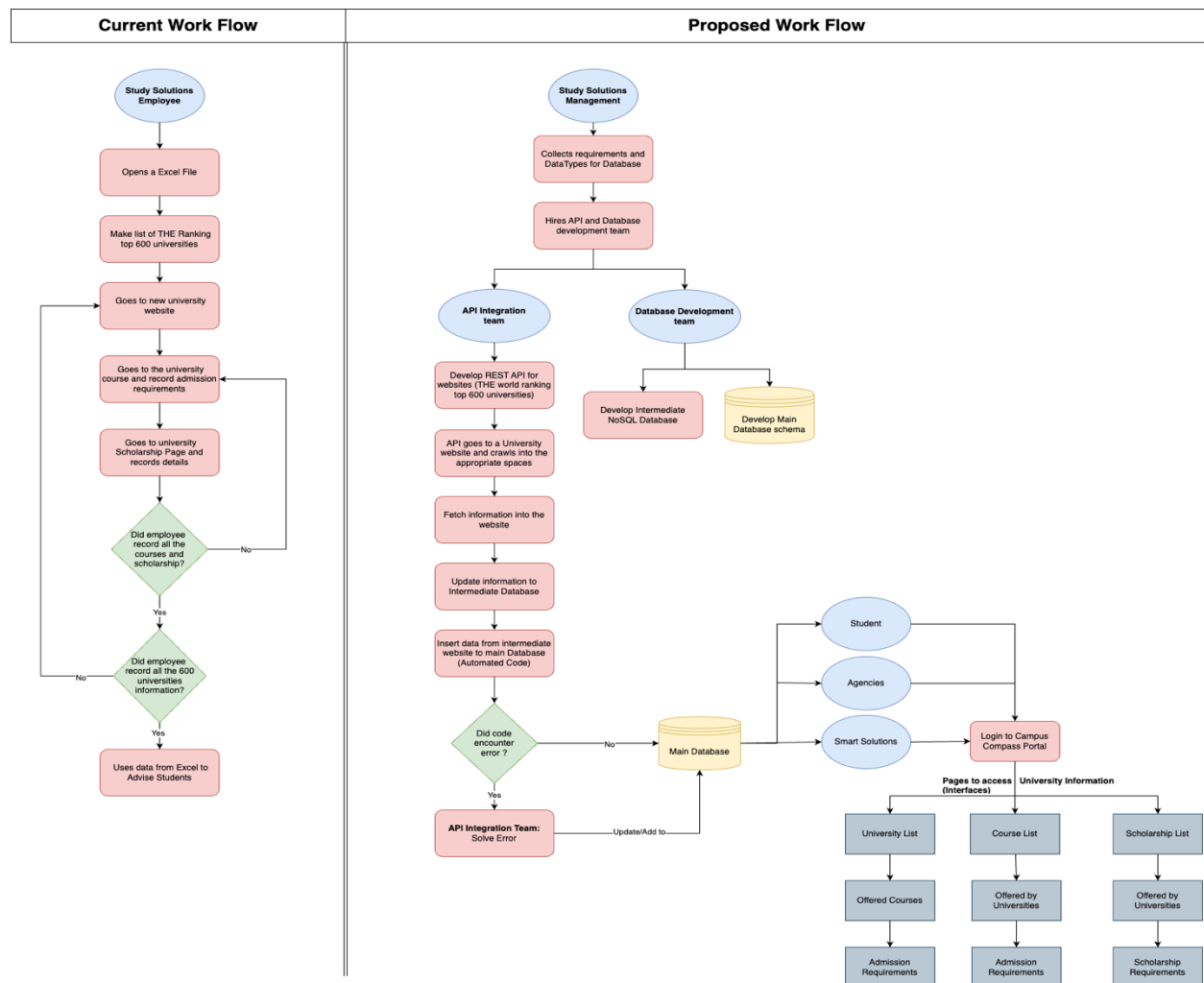
1. Firstly, the system employs predictive analytics to offer students a personalized score estimating their likelihood of acceptance into a specific course or university. Leveraging historical data and admission patterns, this predictive scoring mechanism aids students in making informed decisions about their educational pursuits.
2. Secondly, the AI analyzes individual student profiles and activities to generate tailored recommendations for courses and universities that align with their academic goals and interests. This not only streamlines the decision-making process but also ensures that students receive guidance aligned with their unique preferences.
3. Lastly, a Chatbot powered by AI is integrated into the platform, responding to student queries promptly and effectively. This interactive feature provides instant assistance, offering a seamless and efficient communication channel for users seeking information or clarification, contributing to an enhanced overall user experience within Campus Compass.

To implement AI in Campus Compass for predictive scoring, course recommendations, and a chatbot, we can leverage Salesforce Einstein, a powerful AI platform integrated with Salesforce. Here's a breakdown of each activity:

1. Predictive Scoring:
 - a. Model Training: Train a predictive model using historical data, considering factors like GPA, test scores, extracurricular activities, etc.
 - b. Einstein Prediction Builder: Utilize Salesforce Einstein Prediction Builder to create a model that predicts the likelihood of a student getting accepted to a specific course or university.
 - c. Integration: Integrate the predictive model into Campus Compass to provide a score for each student based on their profile.
2. Recommended Courses and Universities:
 - a. Behavior Analysis: Analyze user behavior, preferences, and historical data to understand the patterns of successful course and university selections.
 - b. Einstein Next Best Action: Implement Salesforce Einstein Next Best Action to provide personalized course and university recommendations based on the user's profile and preferences.
 - c. Feedback Loop: Include a feedback mechanism to continuously improve the recommendation algorithm based on user interactions and decisions.
3. Chatbot Implementation:
 - a. Chatbot Platform: Choose a chatbot platform compatible with Salesforce, such as Salesforce Chatbot or integrate with third-party platforms.
 - b. Natural Language Processing (NLP): Implement NLP capabilities to understand and interpret user queries in a conversational manner.

- c. **Integrate with Knowledge Base:** Integrate the chatbot with Campus Compass's knowledge base to provide accurate and up-to-date information.
- d. **Multi-Channel Support:** Ensure the chatbot can be accessed through various channels like web, mobile, or messaging apps.
- e. **FAQs and Common Queries:** Pre-train the chatbot with frequently asked questions (FAQs) and common queries to provide prompt responses.
- f. **Escalation to Human Agents:** Implement a seamless escalation process to connect users with human agents when needed.

Participants and Key Activities



This flowchart shows how our proposed database will improve Study Solutions' current workflow. The following are the key activities facilitated by the Campus Compass.

- Currently, the university data are manually recorded, which can cause human error and outdated data. The proposed solution will update the data regularly, which will help in making informed decisions.

- The business model of Study Solutions will be upgraded as it will generate income from using the database to help students and share the database portal for a subscription.
- API will automatically fetch data from the 'specified place' of the university website to the intermediate database (NoSQL), and scripts are predefined to insert into the central database. If some error is encountered, the data integration team will solve it. This 'specified place' will allow the API to collect relevant data from different types of pages from any website.
- In addition to data warehousing, timely database monitoring is done to ensure data accuracy.

Touchpoints

- Frontend for Students and Consultants: This is the database interface that students and consultants interact with by giving their details to get personalized results.
- Backend Interface for Data Management: The API Management Team is the only one with access to this interface, which offers sophisticated tools for organizing and modifying data inside the database. They can define data validation rules, set user permissions, and add, update, or remove records. The accuracy and integrity of the data kept in the database are ensured by this team.
- Monitoring the Automated Process: For efficiency, the system automates updating the information twice a year. Tracking the effectiveness of these automated processes, locating and fixing problems, and improving their performance are all part of monitoring them. This guarantees smooth functioning and reduces disturbances for users.

Key decisions

Following are the key decisions for the Campus Compass project.

- University List: Campus Compass will only feature the top 600 universities listed on THE world ranking website. This will help students in Southeast Asia to choose their universities more easily.
- Data Type and Requirements: It involves defining and specifying the types of data to be collected, processed, and stored within the platform. This encompasses admission criteria, scholarship details, and other relevant information.
- Fetching Methods: API will retrieve data from a university website and update it to an intermediate NoSQL database. An automated SQL script is written to transfer data from the intermediate database to the main database.
- Budget and profitability: Effective management of the Campus Compass project requires keen attention to budget allocation and long-term profitability. It involves strategic financial planning and determining the pricing structure for clients.

Business Requirements

1. *Increase student base and market share:*
Capture a significant share of the growing international education consultancy market by attracting students through a comprehensive and user-friendly database.

2. *Boost revenue:*
Generate sustainable revenue through subscriptions from individual students and higher education consultancy firms.
3. *Enhance brand reputation:*
Establish Campus Compass as a trusted and reliable resource in global education consultancy, differentiating it from competitors.
4. *Improve operational efficiency:*
Reduce consultant workload and streamline the application process by automating data gathering and providing easy-to-use search and filtering tools.

Functional Requirements

1. *Comprehensive University Database:*
 - The system must have detailed information on admission requirements, scholarships, and programs for the top 600 universities worldwide based on THE World Ranking.
 - Data should be categorized by factors like study level (graduate/undergraduate), region, and program type.
2. *Automated Data Integration:*
 - The system must integrate with REST APIs to automatically fetch and update university data twice a year.
 - API integration should be flexible and adaptable to handle variations in university website structures.
 - Error handling mechanisms must be implemented to address data extraction and integration issues.
3. *Personalized Search & Filtering:*
 - The platform should offer user-friendly search functionalities based on customizable criteria like location, program, scholarship availability, and tuition fees.
 - Advanced filtering options should allow users to narrow down university options based on specific preferences.
4. *Interactive Tools & Resources:*
 - The system should provide interactive tools like program comparison charts, cost-of-living calculators, and application deadline trackers.
 - Educational resources and expert insights should be integrated into the platform to guide students through the application process.
5. *Subscription Management System:*
 - The platform must offer secure and scalable subscription plans for individual students and consultancy firms.
 - Different subscription tiers should cater to varying needs and provide access to various levels of functionality.
6. *Data Analytics & Reporting:*
 - The system should track user activity and platform usage to generate insightful reports on user trends, universities, and scholarships.
 - Data analysis tools should be available to consultants for optimizing their services and providing targeted recommendations to students.

7. *Scalability & Security:*

- System architecture should be scalable to accommodate future growth and an increased user base.
- Robust security measures must be implemented to protect user data and ensure platform integrity.

Financial Viability of Campus Compass: Investment, Revenue Streams, and Return Analysis

Investment

The initial investment for Campus Compass is estimated to be around \$500,000. This cost breakdown can be further categorized as:

- Software Development: \$250,000
- Marketing & Branding: \$100,000
- Operational and Contingency Costs: \$100,000

This is a preliminary estimate, and the actual cost may vary depending on factors like the chosen technology stack, marketing strategy, and staffing requirements. Potential funding sources for Campus Compass could include:

- Bootstrapping: Utilizing Study Solutions' existing resources and reinvesting profits.
- Angel Investors: Securing funding from individuals interested in early-stage ventures.
- Venture Capital: Seeking investment from VC firms focused on education technology.
- Bank Loans: Obtaining traditional loans from financial institutions.

Revenue Streams

Campus Compass plans to generate revenue through several streams:

1. *Student Subscriptions*
2. *Consultancy Subscriptions*
3. *Data Licensing with other educational institutions*

Profitability evaluation

Based on projected revenue and expense forecasts, the estimated payback period for Campus Compass is three years. This means the initial investment is expected to be recovered within this timeframe through generated revenue.

The Net Present Value (NPV) of the project, considering a discount rate of 10%, is projected to be positive. This indicates that the expected discounted future cash inflows from the project outweigh the initial investment, making it a financially viable undertaking.

The Internal Rate of Return (IRR) is estimated to be above 20%, exceeding the chosen discount rate. This suggests that the project generates a high rate of return on invested capital, further emphasizing its financial attractiveness.

These are preliminary estimates based on assumptions about market size, subscription adoption rates, and pricing models. A detailed financial model with sensitivity analysis should be developed to refine these figures and assess the impact of various variables on the project's financial viability.

SWOT Analysis

SWOT Analysis			
	Positive		Negative
	Strength		Weakness
Internal related to the company	<ul style="list-style-type: none"> - Increase in customer volume due to database - Give comprehensive choices to customers - Robust database to guide the clients 		<ul style="list-style-type: none"> - Database/Website downtime might lead to potential loss - Extra investment in maintaining the database
	Opportunities		Threat
External industry and competitors	<ul style="list-style-type: none"> - Data Driven decision due to virtual platform about customers - Global expansion - Recurring revenue streams from subscriptions in a large scale 		<ul style="list-style-type: none"> - Disaster might lead to data loss - Cybersecurity or Data theft - Data privacy regulations might impact data collection through API

Additional threats could include ownership/copyright authority over database

Identify and describe existing information systems

As of the present state, Study Solutions relies on manual research processes for gathering admission and scholarship information for students looking to study abroad. The lack of a centralized database leads to inefficiencies and delays in providing comprehensive solutions to clients. The proposed solution, Campus Compass, aims to address these issues through the implementation of information systems and technology.

1. Existing Information Systems:

- **Manual Research Tools:** The current process involves consultants manually researching university websites and databases to gather information. This process is time-consuming and prone to human error.
- **Communication Channels:** Email and phone calls are used for communication with students, and information is scattered across emails and notes.

2. Proposed Information Systems:

- **Campus Compass Database:** The proposed solution involves the development of Campus Compass, a robust online database. This system would include automated REST API integrations on Salesforce to fetch and update data from university websites twice a year, reducing reliance on manual research.
- **Salesforce Service Cloud:** The Salesforce platform will be utilized for its scalability to handle data integration, user interface, and subscription management. It provides tools for configuring and customizing solutions to meet specific business requirements.

3. Network/Wireless/Internet Access:

- The success of Campus Compass depends on robust network connectivity and internet access. The proposed API integrations require reliable internet connections to fetch and update data from university websites.

4. In-house IT Staff:

- Study Solutions should evaluate the capabilities of its in-house IT staff to configure, customize, or develop IS solutions. If there are limitations, additional training or hiring may be necessary.

5. External IT Service Providers:

- If the in-house IT staff has limitations, Study Solutions may consider utilizing external IT service providers for specific tasks, such as API integration, platform development, or ongoing maintenance. One external scraping API that we can integrate is OxyLabs' web scraping solution, which will scrape automatically.

Viable alternatives for successfully meeting the business need

Alternative 1: Custom Development with In-house Resources

For Alternative 1, involving custom development with in-house resources, the required capabilities include developing a custom database, building REST API integrations for data retrieval, designing a user-friendly front end, and implementing robust security measures. While this approach provides full control over the development process and ensures a specialized solution, it comes with drawbacks, including being resource-intensive, time-consuming, requiring a high level of technical expertise, and carrying the potential for deployment delays.

Alternative 2: Commercial Off-the-shelf (COTS) Solution: Salesforce Education Cloud

For Alternative 2, involving a Commercial Off-the-Shelf (COTS) Solution with Salesforce Education Cloud, the required capabilities encompass a cloud-based database, seamless API integration for data updates, customization options to meet business requirements, a user-friendly interface, and robust security features. The approach recommends procuring Salesforce Education Cloud, a prebuilt solution for educational consultancy firms, configuring and customizing the platform

according to business needs, leveraging Salesforce's existing API integration capabilities, and providing staff training for effective utilization. This alternative offers advantages such as rapid deployment, reduced development effort, and built-in scalability and security. However, drawbacks include licensing costs and limited flexibility compared to custom development.

Alternative 3: Hybrid Solution: Salesforce Integration with External Database

For Alternative 3, the Hybrid Solution involving Salesforce Integration with an External Database, the necessary capabilities include an external NoSQL database for storing university data, integration capabilities between the external database and Salesforce, and customization of Salesforce for user interaction and subscription management. The approach suggests using a NoSQL database for data storage, integrating it with Salesforce through APIs, leveraging Salesforce for user interface and subscription management, and maintaining flexibility.

Economic and operational evaluation of the identified alternatives

Criteria	Custom Development	COTS (Salesforce)	Hybrid Solutions
Costs	\$800,000 upfront + \$50,000 security audits	\$350,000 upfront + \$100,000 annually for Salesforce licensing	\$550,000 upfront + \$100,000 annually for Salesforce licensing
Benefits	Customization control, tailored solution	Rapid deployment, built-in scalability	Balance between customization and cost savings
Time Frame (Development)	24 months	5 months	15 months
Time Frame (Implementation)	30 months	12 months	20 months
Customization	High	Moderate	High
Risks	Technical complexity, potential delays	Ongoing licensing costs, dependency on Salesforce infrastructure	Data integration challenges, managing consistency
Scalability	High	High	High
Technical Expertise	High	Low	Moderate

Comparison:

- Costs: Alternative 2 has lower upfront costs compared to the other alternatives.
- Benefits: Alternative 3 provides a balance between customization and cost savings.
- Time Frame: Alternative 2 has the shortest implementation time.

Considerations for Decision-making:

- Budget: Custom development has higher costs, while COTS has licensing fees.
- Timeline: Custom development may take longer, while COTS takes a shorter time.
- Flexibility: Custom development provides the highest level of customization. COTS solutions, including Salesforce, may have limitations but can be highly configurable.
- Expertise: In-house technical expertise is crucial for custom development. COTS solutions require training but are generally user-friendly.
- Scalability: All alternatives should support scalability to accommodate future growth

Recommendation

After a thorough evaluation of the alternatives, it is recommended that Study Solutions pursue the implementation of the Salesforce Education Cloud as the Information System (IS) solution to meet the business need of establishing Campus Compass. This recommendation is based on several key considerations:

1. Rapid Deployment: Salesforce Education Cloud offers a prebuilt solution tailored for educational consultancy firms, ensuring a faster deployment timeline.
2. Reduced Development Effort: Leveraging Salesforce's existing capabilities eliminates the need for extensive custom development, reducing the overall effort.
3. Built-in Scalability and Security: Salesforce is known for its robust security features and scalability, providing a reliable foundation for handling data integration, user interaction, and subscription management.
4. Customization Flexibility: Salesforce Education Cloud allows for customization, providing a balance between specific business requirements and leveraging prebuilt functionalities.

Next Step Forward

1. Project Kickoff:
 - Define project goals, scope, and timelines.
 - Allocate roles and responsibilities within the project team.
2. Technology Setup:
 - Initiate the setup of Salesforce Education Cloud and related technologies.
 - Collaborate with Salesforce representatives for platform configuration.
3. API Integration Planning:
 - Develop a detailed plan for API integration with university websites.
 - Collaborate with the Data Integration Team to define API specifications.
 - Ensure compatibility and flexibility for handling variations in website structures.
4. Database Development:
 - Begin the development of the Campus Compass database
 - Collaborate with the Data Integration Team for database monitoring procedures.
5. User Interface (UI) Development:
 - Start UI development for the platform, ensuring a user-friendly experience.

- Implement personalized search filters and interactive tools following requirements.
- Conduct user testing for feedback and improvements.
- 6. Subscription Management System:
 - Develop a secure and scalable subscription management system.
 - Define subscription tiers catering to individual students and consultancy firms.
 - Collaborate with the Salesforce representative for subscription-related configurations.
- 7. Training and Onboarding:
 - Plan training sessions for Study Solutions staff on using Salesforce Education Cloud.
 - Develop user guides and documentation for both internal staff and end-users.
 - Conduct onboarding sessions for the Data Integration Team on API management.
- 8. Testing and Quality Assurance:
 - Implement rigorous testing procedures for the entire Campus Compass system.
 - Conduct integration testing for API functionalities and data updates.
 - Address and resolve any identified issues promptly.
- 9. Marketing and Branding:
 - Launch a marketing campaign to promote the Campus Compass platform.
 - Develop branding materials and strategies to attract clients.
 - Monitor the effectiveness of marketing efforts and adjust as needed.
- 10. Financial Monitoring:
 - Regularly monitor the financial aspects of the project.
 - Compare actual costs with the initial budget and adjust financial plans accordingly.
 - Evaluate revenue streams and adjustments based on subscription adoption rates.

By following these structured next steps, Study Solutions can effectively lead the implementation of the Campus Compass project, ensuring a smooth transition from the current state to the envisioned future state.

Conclusion:

In conclusion, after thoroughly evaluating the alternatives for meeting Study Solutions' business needs, the Commercial Off-The-Shelf (COTS) Solution, specifically Salesforce Education Cloud, emerges as the most favorable choice. The associated cost is outweighed by the rapid deployment, reduced development effort, and built-in scalability provided by the COTS solution. The cost savings and flexibility offered by Salesforce Education Cloud align well with Study Solutions' goals, making it a financially prudent and operationally efficient choice.

Moreover, the COTS solution minimizes the risks associated with technical complexity and resource dependence, providing a robust platform that integrates seamlessly with university websites, offers customization options, and ensures data security. While the other alternatives present viable options, the clear benefits of a COTS solution, especially in terms of time efficiency and scalability, make Salesforce Education Cloud the recommended choice. Moving forward, Study Solutions should focus on effective implementation, staff training, and continuous monitoring to ensure successful integration of the chosen COTS solution, marking a transformative step towards enhancing its international education consultancy services.