The Business Intelligence Group at the University of Illinois at Urbana-Champaign: A Case Study

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1. Background

The Business Intelligence Group (BIG) at the iSchool at the University of Illinois at Urbana-Champaign (UIUC) started in 2014 as an experiential learning platform for the students interested in pursuing careers in business and technology management consulting. BIG is a student consulting organizations primarily specializing in formulating strategies in knowledge management, information management, data analytics, business research, and technology-based business development. The iSchool at UIUC had consistently been offering business-related courses such as Information Consulting, Competitive Intelligence, and Business Information. However, rapidly changing requirements from industry necessitated engaging students with real-world experiences, linking their knowledge learned in classroom to solving complex problems which many organizations now face with the emergence of new technologies and opportunities.

BIG has three objectives:

1. BIG seeks to create an experiential learning environment where students are immersed in real-world projects.
2. Students gain professional experiences utilizing their classroom knowledge and training to solve complex business and technology management problems.
3. Clients must high quality services that have actual and practical impact on their businesses.

2. Students

Students interested in joining BIG must apply and be accepted each semester. BIG typically maintains 15-20 students each semester, but due to the increased demand from students and the launch of a new master's program (Master of Science in Information Management) in 2015, BIG now seeks to recruit an average of 25 students per semester beginning in the fall of 2017. Students accepted to BIG are not limited to those with business degrees or significant work experience; rather, BIG seeks to recruit iSchool students with diverse backgrounds to ensure a variety of skillsets and unique perspectives, which our industry partners expect from BIG as a student consulting organization.

Figure 1 shows core subjects that BIG usually requires students to study at the iSchool before applying to join BIG. In addition to those subjects, BIG also recommends courses in science information, patent information, data visualization, entrepreneurship, and change management.

Figure 1: Core subjects required
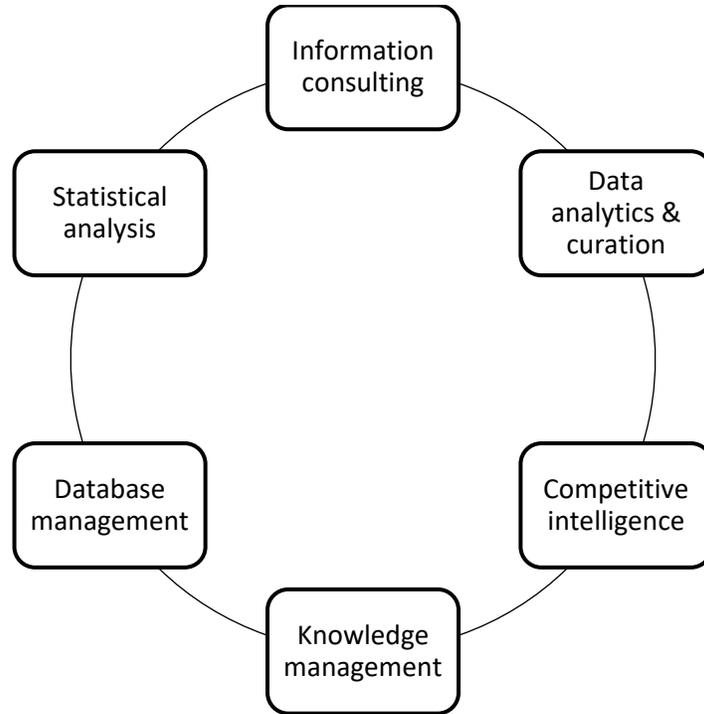
3. Clients

The faculty advisor of BIG is responsible for sourcing clients for projects. The faculty advisor uses his personal network of professionals as well as formal requests for corporate partnership. Since 2014, over 20 projects have been completed for 16 clients. Clients are typically medium or large-size corporations with annual revenues greater than $250 million; however, BIG is also increasingly working with technology start-up companies as well as individual entrepreneurs. BIG's past clients in the private sector include Fortune 500 companies, professional consulting firms, and manufacturing companies.

In addition, BIG seeks to build relationships with non-profit organizations. Each semester, BIG has at least one community service engagement. Local community organizations usually have limited resources to launch new community services initiatives. BIG's student consultants make significant contributions to those community organizations by providing consulting services in information management, business research, service model creation, and data analysis. BIG was also once engaged with a university in East Asia and conducted in-depth research and provided recommendations in establishing its own data analytics program. Table 1 shows the number of projects for BIG since 2014 and its clients' primary industries.

Table 1: Projects from clients in diverse industries	
Industry	**Number of projects**
Consulting services	3
Financial services	7
Manufacturing	7
Education	2
Non profits	2
Total	21

Interestingly, about a half of the clients are international. International clients bring additional challenges to BIG consultants. Among many factors, BIG consultants must learn to work with clients in different time zones, language barriers, and cultural issues. Such challenges are greatly appreciated by student consultants, since they can truly experience the real-world situations.

4. Project types

As shown in Table 2, the types of projects for BIG vary each semester. BIG's service profile includes knowledge management, business research, data analysis, strategy, business model development, and technology-based business development. In order to differentiate itself from other business consulting organizations on campus, BIG carefully designs the scope of each project not to overlap with traditional business consulting engagements. BIG often has to negotiate with clients in initial project phase, so that the main objective of the project is in line with the iSchool's educational goals and areas of expertise.

Table 2: Project types	
Type	**Number of projects**
Strategy	7
Knowledge management	6
Market research	5
Business model	3
Total	21

As mentioned earlier, the focus of BIG's service is to translate information into knowledge and insights, so that its clients have better understanding of their current state and future opportunities. This principle guides the selection of projects and client relationship management. Recently, BIG began to work with technology start-up companies by recommending business strategy and business models. These start-up companies present special opportunities for BIG, as their businesses are based on data analytics, and student consultants have great opportunities to practice their knowledge and skills in the fields of data analytics. Student consultants work on many phases of data analytics – data collection, data curation, data analysis, and product or service development based on data.

Below are some of BIG's recent engagements[1]:

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[1] Since all projects are bound by the Non-Disclosure Agreement (NDA), client names cannot be disclosed.

- Building strategy hypotheses on the use of blockchain technology with data services for a heavy equipment manufacturing company
- Establishing an optimal knowledge management process for an international university consortium
- Benchmarking best data analytics programs in the United States and Europe
- Understanding the impact of data-driven transportation system on the insurance industry
- Assessing knowledge management options and tools for a small size consulting firm
- Developing a business model for a mobile healthcare service company with a focus on health data collection and analytics
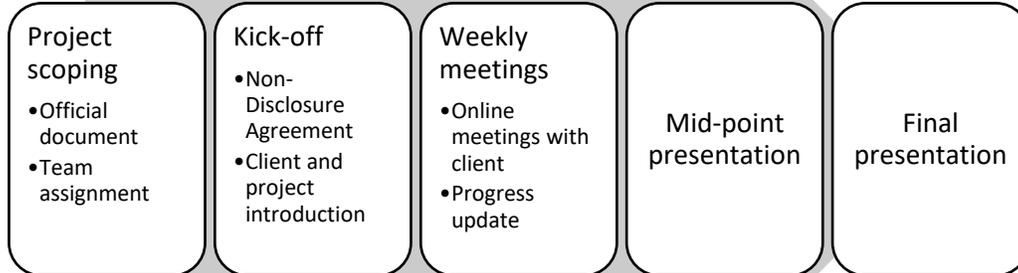
5. Project process

Students selected for BIG typically have taken the Information Consulting class at the iSchool, which provides fundamental trainings in consulting. The Information Consulting class covers such topics as project scoping development, client relationship management, problem-solving, research and analysis, and presentation. The faculty advisor also selects students with specific skills required for certain projects.

Each team has four to six student consultants, depending on the scope of the project. The Project Manager (PM) is the leader of the team, and the PM must have previous project management experience. The PM may request the faculty advisor to appoint a Senior Consultant to assist the PM. The PM acts as the liaison among the faculty advisor, client, and the team. The PM, therefore, must possess excellent communications skills as well as team management skills. Becoming a PM is highly competitive. Student consultants apply for this role after one or two engagements, and the faculty advisor makes the selection in consultation with current PMs.

Figure 2 shows BIG's typical project process. As shown in the figure, the process resembles that of professional services firms for their engagements. As an experiential learning opportunity, BIG creates an environment where student consultants and clients interact with each other in a professional manner. During the project scoping stage, the client agrees with this process and pledges participation in weekly or bi-weekly meetings during the engagement.

Figure 2: Typical project process

Project scoping	Kick-off	Weekly meetings	Mid-point presentation	Final presentation
•Official document •Team assignment	•Non-Disclosure Agreement •Client and project introduction	•Online meetings with client •Progress update		

At the kick-off meeting, the PM introduces all team members and the client. Depending on their availability, some clients visit the campus to join this meeting or join them online. The PM also shares the team policy and expectations, as well as the project timeline. All team members are advised on evaluation criteria, weekly assignments, team participation, and individual roles and responsibilities. The team then meets with the client on a weekly basis, mostly via online conferencing tools, to update the project progress and ensure that the progress is in line with the client's expectation. The mid-point presentation takes place at the half point of the engagement, and the project team presents their findings thus far and future activities. This is a major milestone for the engagement, as many changes are made at this point. The final presentation usually takes place either at the client's site or at the campus. Some clients request additional deliverables such as white papers and summaries of research findings, and these items are also submitted at the final presentation.

6. Partnership

Perhaps one of the most unique aspects of BIG compared to other student consulting organizations on campus and at other universities is its partnership with similar programs at universities in Asia. BIG has maintained a very close relationship with universities in East Asia, Europe, and the United States. This partnership strengthens the quality of BIG's services in several ways:

- Sourcing clients: BIG has engaged in both domestic and international consulting projects in collaboration with partner universities, as partner universities are responsible for sourcing clients in their regions.
- Education: BIG and its partners can complement one another with skills and knowledge especially in the areas of emerging technologies and international business.

- Career development: Past BIG student consultants succeeded in securing positions at multinational corporations, as their experience with international clients was highly valued by their employers.

In 2015, for example, BIG completed a project for a client in South Korea to recommend a business growth strategy for healthcare data-service company. This client was highly satisfied with the quality of the deliverable and proposed to continue to offer projects for BIG. Currently in 2017, BIG is working on a project in collaboration with at Ulsan National Institute of Science and Technology in South Korea to recommend a data-driven service development strategy for a Fortune 500 company.

7. Outcome

Among the projects that BIG has completed since 2014, there are several factors that help understand the impact of BIG in educating iSchool students:

- Due to the high number of applicants, acceptance is competitive.
- BIG is receiving an increasing number of inquiries from companies and non-profit organizations for potential engagements.
- BIG's student consultants receive offers from consulting firms for the position of consultants and analysts. Previously, most offers for iSchool students were concentrated on the position of researchers.

8. Challenges

Despite is rapid growth and success, BIG has several challenges:

- To ensure the quality of service, BIG must maintain its optimal level of membership. At the same time, however, BIG also needs to attempt to provide similar experience to all iSchool students. As the interest from students grows, BIG and the iSchool need to figure out ways to ensure that all interested students gain experiential learning opportunities.
- BIG does not charge clients for consulting services. On the one hand, this helps BIG with sourcing clients, as many fee-based student consulting organizations struggle to find clients willing to pay for the service. On the other hand, the lack of financial support from clients may potentially limit further growth of BIG. Many projects require different types of expenses such as travel, meeting arrangement, and research reports to ensure high quality.
- Sourcing clients always requires high energy and commitment. This is a problem with which almost all student consulting organizations has to struggle, whether they are fee-based or not. It usually takes months or years to develop relationships with potential clients, and securing a sufficient number of projects for students each semester is always a great challenge. Creating partnerships with universities may ease this burden (for example, the partnership with a Korean university brings international clients in the project pipeline).