BUSINESS PLAN
FOR

Team INCA

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Executive Summary

1.1 The Opportunity

IASSoft develops Internet Allocation Systems Software to improve the processes for allocating the resources in businesses and academia. The systems are based on the allocation technology that was developed at the Information and Computer Sciences department at University of Hawaii to solve the problems of approval code allocation occurring during the registration sessions. INCA (INternet Course Allocation) is the company's first product based on allocation technology. INCA will be targeted initially at the higher education market and later at the corporate university market. INCA and other exciting products based on it have the potential to reach $50 million of annual sales within next 5 years of operation. We believe that such a business opportunity exists because:

- The annual IT spending of higher education institutions across US is expected to reach $4.3 billion by year 2003.
- There is a huge corporate university market consisting of big corporations across US. These corporations spend $60 billion annually on the training programs for their employees, customers and business partners.
- The allocation technology is based on new and promising J2EE (Java 2 Enterprise Edition) technology from Sun Microsystems to build robust, scalable, flexible and extensible n-tier database systems.
- We have identified a niche to enter into the education systems market

1.2 Products and Benefits

The company will offer INCA in three editions, namely, Departmental Edition, University Edition and Corporate Edition. Each of them automates the allocation processes and makes them more efficient. The company plans to release Departmental Edition and University Editions of INCA by end of first year of operation. The Corporate Edition of INCA will be released by the end of second year of operation.

The Departmental Edition of INCA is in its final stages. It provides benefits to both students and departments. Departments benefit because the administrative overhead to respond to thousands of requests and verify individual student records gets minimized. It is also beneficial to students as it makes the approval code allocation process visible, predictable and understandable to them.

Later, the company plans to build products on the top of INCA like i-advisor (intelligent advisor) to advise the students on their course selections. Along with this vertical expansion, the company will expand its product base horizontally by applying allocation technology to the other market segments to penetrate into them.

1.3 The Market

The company's initial target market consists of 600 colleges out of a total of 2021 colleges in US. Each of these colleges has 100 to 200 departments. In an informal market survey conducted across the different departments at University of Hawaii and some

universities on the mainland, we found that 70% of them are facing same problems as the ICS department at UH. They showed their interest in INCA. The rest 30% of them also showed interest in improving their current processes via software like INCA. The IT budgets of these departments vary from $100,000 to $10 million. The universities across US will spend $4.3 billion on IT by 2003 and corporate US will have $60 billion on their training budgets. [Source: IDC]

1.4 Competitive Strategy

The university registration systems provided by higher education system vendors like PeopleSoft, Buzzeo etc. don't solve the departmental problems. They leave the decision of which students will receive approval codes for the class up to the departments. The departments then manually check the student's eligibility and qualifications to generate the class lists. INCA will be the first product in the higher education markets to solve the departmental problems across a university. This first mover advantage coupled with 36 man-months of development time will help the company position its product in the higher education markets.

The company's another distinctive advantage is that all its Internet software will be based on the J2EE technology that is new, promising and far better than the technologies used by the education systems vendors to build their products. This provides us a big technology advantage. To overcome the copycats, an aggressive marketing and distribution strategy will be employed quickly to establish INCA, create product awareness, generate customer demand, and build volume sales. To ensure the long-term profitability, the company will patent its allocation technology.

1.5 Management

IASSoft's current management team consists of young, ambitious, and motivated professionals who have been actively involved in the development of INCA. A professional advisory board consisting of experienced professionals from the business sector and academia will compensate the gaps in the experience of management team. The INCA advisory board consists of talented individuals including Dr. Philip Johnson (Professor at UH, Director of Collaborative Software Development Laboratory) and Mr. Kevin Robinson (CEO of Hawaii Opportunities Group) who will contribute their vast experience in the development and market positioning of INCA.

1.6 Financial Summary and Offering

As a result of company's aggressive marketing strategy, the company will break even in fiscal year three. Revenues are projected to reach $50 million by fiscal year five. The company's average gross margin is approximately 44% across the five year projected horizon. Average operating cash flows and net margins are estimated at 13% and 20% respectively. The company is seeking $2,000,000 in equity capital. This will be used to fund working capital requirements during the first year of operations. In return, the investor will receive 22% of the pro-data outstanding common shares of IASSoft with a projected 70% return on capital or 7 times his or her original investment in real dollar terms in five years.

Company Overview

2.1 Purpose Statement

The impact of the Internet, high bandwidth communications, and distance education technology on Universities has just begun. Over the next 10 years, market pressures to provide low-cost, efficient, and effective education will increase tremendously, not only in traditional universities, but in new online virtual universities as well. One way to improve the efficiency and effectiveness of classroom education is to improve the way in which students are selected for courses. From the students' side, an improved "course approval system" would increase their chances of enrolling in classes that they can truly excel in. From the professors' side, an improved course approval system would generate classes in which students are truly well prepared and well motivated to learn the material. All this requires efficient processes for selecting the students.

All university registration systems leave this job of allocating the class seats for the departments. The popular departments are unable to make the best possible decisions because of the administrative overheads and lack of proper tools. This results in the frustrations of the students who don't understand the picture behind the scenes. INCA is an Internet Course Allocation System that solves these problems by providing a rule-based framework for automatic allocation of class seats among students. INCA also acts as a decision support system for the departments helping them in making the intelligent decisions for their future course policies. IASSoft is the first company among the higher education system vendors that is focusing on the departmental problems. Eventually, the company will try to emerge out as a leading education system vendor developing new and innovative tools based on latest and cutting-edge technologies.

2.2 Company Background

IASSoft was recently formed in January 2001, on the campus of University of Hawaii at Manoa by Jitender Miglani, Teresa Abenoja, Weifeng Miao, David Liang and Paula Nishida. Four members of the team are working on the INCA project for last 8 months. The idea of a company was conceived during the UH business plan competition. All team members are passionate about their idea and feel that this idea can really make a big business.

2.3 Current Status

The company has clearly recognized the potentials of allocation technology and how it can be utilized in different kinds of market segments. Currently, The developer team is working on launching the Departmental Edition of INCA inside the ICS department at University of Hawaii for the Fall 2001 semester. The developers are very excited about the results of INCA and its impact on the allocation processes inside the department. Later the company will focus its attention towards the development of the University and Corporate Editions of INCA.

Product Description

3.1 Product Description

INCA is the company's first product based on allocation technology. INCA will come in three editions: Departmental Edition, University Edition and Corporate Edition. The Departmental Edition will serve only a single department, whereas the University Edition will be capable of serving all the departments across a university. Both Departmental and University Editions will be inter-operable with the university's existing registration systems. INCA will also serve as a basis for the company's future products like i-advisor. i-advisor will be an intelligent advising system to tell the students not only what courses they should take but also what are their chances of getting those courses and what are their odds of success in a particular discipline. The Corporate Edition will serve the training departments of big corporations in US. It will change the way the employees are selected for the training courses inside the big corporations. It will make the employee selection processes more efficient.

3.2 About The Technology

The company has developed allocation technology (See appendix A) and INCA is an n-tier database system based on that technology. The allocation technology was developed at the Information and Computer Sciences (ICS) department at University of Hawaii (UH) to solve the problem of approval code allocation occurring during the registration sessions. The technology will help the organizations to improve their existing business processes. It automates the tedious and time consuming processes and makes them easy, simple, visible and understandable to the constituents. The technology can be applied in instances where disparity of supply and demands of commodities and services exist, i.e., the number of jobs versus job applicants, the number of business paid vacations versus employees etc. It can potentially and significantly change how loyalty schemes are applied in businesses. The technology could easily propose guestroom assignments based on the guests' past activities, airline seat assignments to passengers, etc.

The allocation technology is based on J2EE (Java 2 Enterprise Edition) technology from Sun MicroSystems. J2EE technology is used for building robust, scalable, flexible and extensible Internet Information Systems. J2EE technology comprises of most advanced Component Transaction Monitoring (CTM) framework, Enterprise Java Beans (EJBs). Some of the other components of J2EE technology are

- Java Servlets
- Java Server Pages (JSPs)
- Java Naming and Directory Services (JNDI)
- Java Messaging Services (JMS)
- Java Mail

INCA exploits all of the mentioned Java technologies to give a robust, scalable and extensible solution. The front-end of INCA is implemented using Java Servlets and Java Server Pages and business logics are implemented using Enterprise Java Beans (EJBs). Any relational database system can be used in the database tier as long as it supports Java using JDBC drivers.

3.3 Product Features

The company is presently working on the departmental edition of INCA. The feature-list based on the current functionality of the departmental edition is as follows:

- General Features
  - A user friendly web interface
  - Rule-based framework to give priority points to the students
  - Import and export of data from the database using XML
  - Elegant web reports for students, course, approval and request data
  - Security in all levels of the implementation
- Administrative features
  - Add, Delete and update operations on student basic and grade data
  - Easily customizable allocation policies
  - Enabling and disabling of automatic approval code allocation
  - Automatic emails to students containing approval codes, passwords and other information
  - Enabling and Disabling of student requests during different registration periods
  - News updates to the students
- Student Features
  - Online, real-time registration, immediate emails to students
  - Information on complete grade history
  - Add, delete and edit operations on course requests
  - Qualification information explaining students what courses they are qualified for and why they are not qualified for other courses
  - Regular updates on student's rank to hint them on their chances of getting their requested courses

3.4 Research and Development

The company rests heavily on the research and development to produce new and innovative products. The departmental edition of INCA is the result of 36 man-months of research and development (3 man-months of software requirement specification, 3 man-months of design, 27 man-months of coding and 3 man-months of testing). All the work has combined 50,000 lines of java code and 400 files.

The departmental edition will be deployed in the ICS department at UH for Fall 2001 registration. The system will go live on the first week of May 2001. The development team is eager to listen the responses from students, administrators and the department. The team will use the feedback provided by the students and the administrators to work on the enhancements of the departmental edition. The team will simultaneously start the research on the University Edition of INCA.

Current INCA team members will continue to do the research and development on newer editions of INCA until the company obtains the money to fund the business and move to a new office. Motivated students from the ICS department will also be welcomed to join the research.

Market Analysis

4.1 Market Opportunity

The market for INCA consists of higher education institutions and big corporations across the United States. The following table shows the breakdown of INCA's initial target market, higher education institutions, in terms of their student body size.

Student Body Size	Number of Colleges
501 –2500	800
2501- 7500	620
7501- 15000	369
15000+	232
Total	2021

[Source: www.collegeview.com]

INCA's addressable market consists of more than 600 institutions with 7,000+ student body size. These institutions are likely to encounter more problems with the allocation of class seats due to the large base of enrolled students in each department. The annual spending on IT by all the institutions across the US is expected to reach $4.3 billion by 2003. [Source: IDC]

4.2 Market Share and Buying Behavior

The higher education market is shared among higher education system vendors, system integrators and value added resellers. The education system vendors supply all sort of software to the universities like billing and accounting system, students records systems, faculty and staff payroll systems, university registration systems, library management systems etc. The universities accept Invitation for Bid (IFB) from these vendors and select the best bid. In some other cases, the university accepts the Requests for Proposals (RFP) to meet their software needs. Then, the university gives the yearly contracts for the maintenance of the software to the companies who supply it. The universities buy all sort of systems for offices, laboratories, classrooms, research projects etc. that satisfy their needs and make their processes more efficient. Departments also use money for small procurements. They make their purchases through Requests For Quotation (RFQ). They can request the university purchasing offices for large procurements. The university then uses IFB or RFP to make large procurements. Given this market share and buying behavior, the company thinks that it will be able to position INCA by aggressive marketing and distribution strategy.

4.3 Growth Potential

The growth potential for the products based on the allocation technology is tremendous. All the universities want to improve the efficiency and effectiveness of classroom education. INCA lets them do that by helping them to improve their current processes. INCA also serves, as the basis for the company's other products like i-advisor. Along with this kind of vertical expansion, the company also plans to expand horizontally by applying the allocation technology to different kinds of situations where the demand exceeds the supply. In all cases, the goal of the company's products is to improve the business processes and make them more efficient.

Competitor Analysis

5.1 Industry Overview

32 education system vendors along with 68 system integrators and 55 value-added resellers share the $4.3 billion higher education industry. Under North American Industry Classification System (NAICS), they are classified under “Custom computer programming services”, “Computer System Integrators” and “Computer System Consultants (except system integrators)” respectively. Their NAICS codes are 541511, 5415121 and 5415122 respectively.

6 vendors among the education system vendors are very big and are well established into the markets other than higher education markets. These include PeopleSoft, DataTel and TouchNet. The rest of the vendors are focused on the education markets. Names of some of them are Applied Business Technologies, Quodata, Buzzeo. These vendors use different kinds of development technologies, from Microsoft, Sun, Oracle or other big software giants, to implement their systems. The software solutions offered also range from centralized systems to distributed systems. The example of distributed software include the registration systems which can be accessed anywhere from the Internet. On contrast, the examples of the centralized system include accounting systems that can be accessed only from a single machine.

Apart from these education system vendors, there are system integrators and value added resellers who supply the ready-made software and hardware from the big industry giants to the university. So, the education software vendors, system integrators and value added resellers are the major players in the higher education software industry.

5.2 Competition

The major vendors of the higher education industry offer their solutions for the university’s primary problems. These vendors are well established in the other markets as well. They have a lot of other areas to focus than the secondary problems inside a university. Thus, these companies are not in competition with us. In fact, these big software companies often form partnerships with the successful small companies of specialty software. The system integrators and value-added resellers also offer no competition to the company as they just install the software and hardware made by the software industry leaders or they just add some of their modules to the existing systems to meet university specific needs.

The remaining 26 education vendors will offer competition to the IASSoft. They do look for every opportunity and can offer their software products at low costs. IASSoft must create strong barriers against these vendors to maintain its profitability.

5.3 Threats

The first major threat to the company is from the 26 education system vendors. They develop software just to satisfy the university needs. They may shift their focus onto the departmental problems. They can also become copycats to copy INCA as closely as they can.

One of the best attributes about INCA is that it is based upon the J2EE technology, which allows the development of robust and scalable systems. The development technologies used by the other vendors don't let their products to be scalable, flexible and easily extensible. Since J2EE is a relatively new technology, they need to switch their products to the J2EE technology to get all the benefits offered by it. It is this technology advantage coupled with the first mover's advantage that will differentiate INCA from the products offered by the other companies.

Big companies don't pose a threat to us as they have other big issues to deal with than to try to capture this niche market. Similarly, the system integrators and value added resellers also don't pose any threat to the company.

5.4 Competitive Strategy

IASSoft will strategically position itself to ensure long-term success in the education industry. In order to gain the competitive advantage, company will achieve the following:

- Provide differentiated products focused to meet the specific needs of the departments and the universities
- Develop a strong marketing strategy incorporating both push and pull initiatives to build demand and rapid volumes
- Erect trademark and patent protection barriers to keep other vendors from copying our products
- Partner with some of the system integrators and value added resellers
- Partner with the local software companies supplying the software to the universities
- Become Application Service Provider (ASP) to offer solutions via the Internet on a rental basis
- Offer the software for one semester free of cost

The company will create barriers against other education vendors through product differentiation. With our first mover's advantage and aggressive marketing strategy, the company will establish INCA into the education markets. We also plan to establish long-term relationships with the system integrators, value-added resellers and local companies supplying software to the universities. This will help us market our products to the customers quickly. Finally, IASSoft's proprietary product technology will prevent competition early in product life cycle. Patents will be applied for both the products and technology used to produce them.

Market Strategy

6.1 Distribution Channels

In order to achieve projected sales volumes by year five, IASSoft will partner with the system integrators, value added resellers and local software suppliers supplying software to the universities. Our partners will have direct contacts with the universities and can approach and convince them faster about our products. Other than this business-to-business approach, the company will adopt a business-to-consumer approach via the Application Service Provider (ASP) model. In that model, the company will be responsible for maintaining the entire systems, thus releasing the system maintenance overhead from our customers. In turn, the company will charge the customers on a semester basis.

Once the product awareness has been created, product acceptance has been achieved and sales history has been established, the company will try to establish the direct relationships with the universities. The company will subscribe to the consolidated bidders mailing list by the universities. This will keep the company updated about the kind of software universities want to buy and provide the company with the bid or proposal opportunities.

6.2 Promotion

The company will launch an aggressive marketing campaign to quickly establish our products and generate customer demand. To promote the product, the company will send information brochures and features/benefits cards to the purchasing offices of the universities. The company will offer a free trial of the product for one semester and will provide free software support during that period. We will ask our business partners to give live demonstrations of our products in the universities. These demonstrations will enhance visibility, generate excitement and give us the feedback about our products. We will also contract well-known authors for articles on features and benefits of INCA. These articles will be published in education journals and will be used in our promotional efforts.

6.3 Pricing

The pricing of the products will depend upon the edition of INCA and the time and effort the company will spend in building the products. The time will be measured in man-months and the effort will be measured in terms of Lines of Code (LOC) or function points. The pricing will be very competitive in nature and the company will adjust the pricing policies depending upon situations and circumstances. The current pricing for the departmental edition of INCA is $5,000 on a semester basis via ASP. The software will be licensed to the university for $45,000.

Financial Analysis

7.1 Deal Structure

The founders will invest $25,000 in near future for buying the necessary software and hardware to keep working on the allocation technology until the necessary funding is obtained. IASSoft is initially seeking $2,000,000 in equity capital. In return for the investment, the investor will receive 22% of the outstanding common shares of IASSoft. 50% of the outstanding shares will be divided among the founders of the company. The remaining 28% of the shares will be reserved for future employees of the company. This is to provide them for the motivation to do the hard work. The final deal structure is subject to negotiation. Therefore, the transaction, as represented herein, represents one of many possible avenues available to the investor. The company is open to negotiating an appropriate investment strategy. The Return Of Investment (ROI) is largely dependent upon the selection of exit multiple and growth of the company.

7.2 Use of funds

The business requires initial investment of $2,000,000 in two separate capital injections of $500,000 and $1.5MM. The first $500,000 will cover the six months of operation covering costs related to a patent application, legal fees for establishing the company, the hiring of 5 programmers to develop the technology, a business analyst, a sales and marketing manager, the renting of office space, and acquisition of all necessary computer and office equipment. The second round of $1.5MM would then be used to cover programming, hiring additional marketing and sales resources, administrative costs needed to develop the Internet allocation technology vertically and/or horizontally to allow for initial customers to be serviced in an ASP model. The company will need a big investment of $6MM in the third year of operation to cover the development, sales and marketing for the horizontal applications along with commercializing the ASP model.

7.3 Financial Review

A five year financial forecast for IASSoft is shown below:

	Year 1	Year 2	Year 3	Year 4	Year 5
Sales	250,000	1,250,000	8,000,000	20,000,000	50,000,000
COGS	1,500,000	3,500,000	4,500,000	8,000,000	15,000,000
Gross Margin	---	----	3,500,000	12,000,000	35,000,000
Investments Received	$500,000	$1,500,000	$6,000,000	----	----
Employees	6	15	35	65	100

Management

8.1 Management Team

IASSoft's current management team consists of young, ambitious, and motivated professionals. These professionals have been actively involved in the development of allocation technology and INCA. For the next few months, the founders will assume the company's major positions. However, all the positions are temporary. Upon obtaining the necessary funding, the company will look for the right people to fill these positions and then founders will assume different roles. Jitender Miglani will be the interim CEO, Teresa Abenoja will be interim CFO and David Liang will be interim CTO. The following table gives names of the founders, their background and link to their resumes:

Name	Interim Roles, background and link to resume
Jitender Miglani	CEO of the company. Graduate Student of ICS department (graduating spring2001) http://www2.hawaii.edu/~jitender/resume.htm
Maria Teresa Abenoja	CFO of the company. Graduate Student of TIM school (graduating spring2001) http://www2.hawaii.edu/~abenojam/resume.pdf
David Liang	CTO of the company. ICS major from ICS department (graduated) http://www2.hawaii.edu/~zliang/resume/DavidLiang.htm
Weifeng Miao	Chief Software Designer. Graduate Student of ICS department (graduating fall 2001) http://www2.hawaii.edu/~weifeng/resume.htm
Paula Nishida	User Interface Designer and Quality Assurance Leader. ICS Major from ICS department (graduating spring 2001) http://www2.hawaii.edu/~pnishida/resume.htm

8.2 Board of Advisors

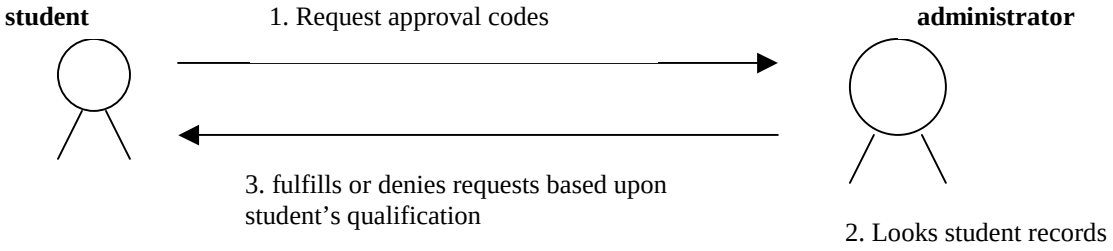
A professional advisory board consisting of experienced professionals from the business sector and academia will compensate gaps in the experience of management team. The following table provides the names of people in advisory board, their background and links to their homepages:

Name	Advisor's Role, background and Link to Homepage
Philip Johnson	Advisor for "Software Engineering practices" in the company. Professor in the ICS department, Director of CSDL, currently serving in the Board of Directors at HTDC and HSDC http://csdl.ics.hawaii.edu/~johnson
Kevin Robinson	Advisor for market positioning of INCA CEO of Hawaii Opportunities Group http://www.hawaiiopportunitiesgroup.com
Chris HundHausen	Advisor for "Usability Engineering practices" in the company. Associate Professor in ICS department, worked in usability engineering labs at Microsoft for 2 years. http://lilt.ics.hawaii.edu/~hundhaus/

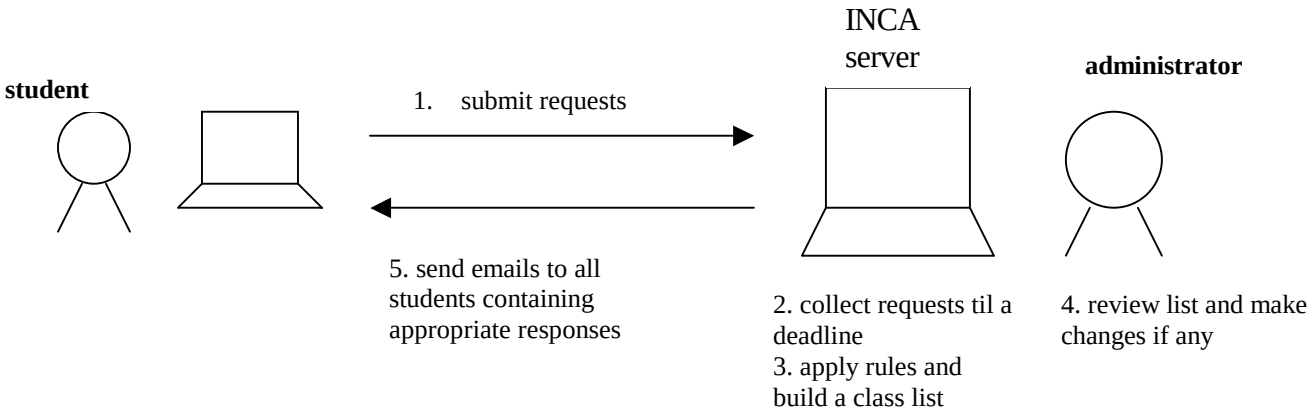
Appendix A

Allocation Technology

Allocation technology is based on Internet Allocation System (IAS) Model of application processing. The understanding of the technology requires advanced distributed software systems knowledge. The following diagrams give an extremely simplistic view of the allocation technology by showing the application processing under the conventional model and the IAS model. The conventional model for application processing is as follows:



The IAS Model improves upon the conventional model by introducing INCA. In this model, students make requests for their courses using a browser like Internet Explorer. The INCA server collects the requests until a deadline is reached, apply a set of rules, build the class list which can be reviewed by administrator and then automatically send emails containing appropriate responses. The IAS Model for application processing is as follows:



The IAS Model provides a lot of distinctive advantages over the conventional model of application processing which are as follows:

Automation – automates the allocation process (requests collection, rules application, sending response emails), thus releasing stress of administrator

Visibility – makes the process visible and understandable to the students

Predictability – allows student to predict their chances of getting into a course

The allocation technology can be applied to different domains to reengineer the business process from the conventional model to IAS Model.