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IQSOFT Ltd. Hungary: A Case for Change

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"IQSOFT will continue as a respected market leader in information management systems through the development and value added distribution of the most advanced products, and by delighting our customers with the highest quality services and the optimal software solutions. Through a unique combination of both technical and commercial activities, IQSOFT will build its product portfolio, enhance its service offerings, and expand its knowledge base as it continually adapts to the changing needs of the information technology market." [12]

- Balint Domolki (managing director, IQSOFT Ltd., 1994)

INTRODUCTION

Technology firms in Hungary face extreme market volatility. In some regards the situation is similar to the high technology firms in Silicon Valley, which seem to thrive on this constantly changing environment. "This unique domain is characterized by fleeting opportunities, shifting customer preferences … and furious global competition [1]." However, in the emerging markets of Central and Eastern Europe the parallels end quickly. In these highly volatile markets, there is no infrastructure to support the newly emerging industries. Thus, the environment probably has more parallels to the California gold rush days then it has to the present day Silicon Valley.

IQSOFT Ltd. is a small firm, in a small country (Hungary), with very little capital, competing in the same market with some of the largest, most powerful, multinational companies. Throughout its history, IQSOFT Ltd. had demonstrated a great deal of resilience and ability to adapt to a quickly changing environment. After a tumultuous year with only thoughts of survival, IQSOFT Ltd. had successfully diversified its product/service portfolio and again achieved a reasonable level of stability. Finally, the management of IQSOFT had an opportunity look at the organization that had evolved during the endless fire-fighting and decide whether it needed to be restructured to achieve the strategic goals of the firm.

Since 1990, IQSOFT had changed, Hungary had changed, and the information systems market had changed. When the directors of IQSOFT; Balint Domolki (managing director), Julia Sipka (commercial director), and Tamas Langer (technical director) (Exhibit A: The management of IQSOFT Ltd.); sat down to discuss the future direction of IQSOFT's organization, they debated the strategic issues which would likely impact the organizational design.

INDUSTRY BACKGROUND - INTERNATIONAL

IQSOFT Ltd. competed in the software and services market. This market could be segmented into the packaged software market (commercially available programs for sale or lease) and the professional services market (including; information technology consulting, custom software development, system integration, education and other services related to the implementation of information technology). This worldwide software and services market had reached $201 billion in 1993 and was expected to show a compound annual growth rate of 10-15% per year. The European software and professional services market was valued at more than $50 billion in 1993 and was expected to grow at a slower compound annual growth rate of 5-10% per year [14].

IQSOFT Ltd.'s primary focus was on the professional services segment of the software and services market. It was in this segment where users were turning to outside resources for assistance in coping with the development, operation and maintenance of information technology systems. Professional services accounted for about 60% of the total market with an expected compound annual growth rate of 5-10% [14].

INDUSTRY BACKGROUND - HUNGARY

IQSOFT Ltd. competed in the Hungarian domestic market of the software and services industry. This industry consisted of approximately 300 firms, which participated in the market as software developers, value added resellers of foreign products, systems integrators, and service providers. International Data Corporation estimated the value of the Hungarian software and services market at 212 M$ in 1993. The initial shock of opening Hungary to free market forces caused a growth surge. By 1994, the market had stabilized and was expected to show a compound annual growth similar to that in the rest of Europe.

The major international information technology (IT) suppliers had captured about 50% of the market, leaving the remaining 50% to the 300 local firms. Of these local firms, the leading 36 accounted for 63% of the local firms share of the market [14].

Within Hungary's software and service market, the capabilities and resources of the local industry were diluted among a wide variety of small and medium size companies. This created an environment where people could work only on small projects, similar to what would be found in an artisan community. Since the firms typically remained small and under capitalized it was impossible for them to finance the cost of creating their own packaged software or participating independently in large projects. Thus, most Hungarian firms focused on the distribution of international products to the Hungarian consumer, providing information technology services on small projects and subcontracting their services for larger projects.

The lack of capital in the domestic Hungarian industry created opportunities for Western software firms and service organizations of large hardware firms to capture the most lucrative Hungarian projects involving the computerization of public administration and utilities. On large projects, the main contractor could often make arrangements for favorable financing. Large Western firms were generally able to do this based on their strong banking relationships outside Hungary while Hungarian firms were limited to local contacts. Therefore, the Hungarian industry participation (in these domestic projects) was limited to providing the programmers and technicians to these large projects.

This created some problems for Hungarian firms hoping to compete internationally. To participate in large international projects a firm needed to have some very strong domestic references. For a Hungarian firm, this meant they must participate in several of the large projects available in Hungary. Unfortunately, most of these projects existed exclusively in the government sector of economy, where power and politics played a major role in supplier selection. The larger international firms continued to have the upper hand in the governmental sector and were awarded most of the contracts. Thus, without domestic references, the Hungarian firms have remained relatively small and isolated within the European and World markets.

Compounding the domestic industry's problems, the Hungarian firms have taken very few proactive marketing steps to increase sales of their products and services. This is partially due to historical reasons and partially due to financial constraints (lacking capital). For historical reasons, many Hungarian firms prefer to rely exclusively on direct selling or informal marketing channels. In contrast, Western firms, as recent entrants to the market, often take a different approach. In these organizations there is much greater emphasis on market research and segmentation, understanding customer behavior, developing different marketing channels, and focusing the product to reach specific consumer groups. Although direct selling and informal marketing channels can be highly effective in the Hungarian market, this strategy leaves a firm vulnerable to losing a key sales channel whenever a key individual leaves. It was common practice for Western firms to buy these individuals and with them obtain the valuable contacts.

Production costs were steadily rising in Hungary and were quickly approaching Western levels. Although low labor costs were once a chief competitive advantage for Central/Eastern European companies, this did not prove to be sustainable. It was becoming more important to compete with superior products and services.

In the professional services segment of the Hungarian software and services market, consumers were reluctant to pay service fees (fees related to the installation and maintenance of information systems). This reluctance severely limited the segments growth and profitability. There were three primary reasons attributed to this problem. The first reason for Hungarian reluctance was their naiveté. Under the former communist system the customer never had to pay for the service portion of an information system installation.

The second reason was that most companies were unaware of the real costs of information technology services. When a service provider measures the costs of a project they calculate the total cost of doing business including overhead, while the Hungarian user typically only recognizes the marginal cost if the service were performed internally. The user then uses this marginal cost as a measure of the value of the service and compares this to the service fees charged. This procedure resulted in a distorted picture and purchase resistance.

The last major resistance to accepting service fees came during the cost benefit analysis. When evaluating the value of a particular service, the Hungarian consumer often fails to consider the added value of timeliness and quality. Even in large complex information systems projects where timeliness, quality, reliability, and supplier responsiveness are major determinants of customer satisfaction, the primary consideration remained price. There was very little scrutiny within companies of the true losses associated with incorrect or delayed systems implementations, and there was virtually no attempt made to measure the price of success versus the costs of failure.

Changing these mindsets and participating in large domestic projects were becoming paramount to survival in the software and services marketplace. Hungarian companies still had one competitive advantage in the domestic market, they knew how to operate in the Hungarian environment and had command of the local language. The value of these could not be underestimated.

GENERAL CHARACTERISTICS OF THE HUNGARIAN SOFTWARE COMPANY AND ITS PEOPLE

"Hungarians strength lie in technical matters related to hardware and software. Their weaknesses generally show up at the beginning and at the end of the project life cycle. Their weaknesses can be classified as a lack of experience in the business related matters of information technology."

– Industry expert Majteny Gyorgy

Inside Hungarian software companies, the management staff is typically small and handles all activities related to the company's operations, sales and marketing, project management. To assist with these activities management maintains a pool of various professionals that they freely move from one activity to another. For a particular project, the individuals will generally be assigned on an ad-hoc basis.

Hungarian programmers have a good reputation internationally for their technical knowledge and many of these software professionals have worked in Western countries. This creates a core workforce of very capable internationally competitive personnel. However they lack skills in software engineering methods and expertise in overseeing the full life cycle of an information systems project. They also lag behind Western countries in their IT consulting expertise, large project management skills, and quality assurance methodologies.

According to industry experts [17], there existed four key areas in which a Hungarian software company needs to deliver to achieve success in the Hungarian marketplace:

- the consumers need to be educated in the value of integrated information systems before they would make the purchase decision
- the systems integrator needs to supply turn key solutions to the customer
- the employees needs to be knowledgeable in the base technologies and latest advancements
- software needs to be open to interact with external systems
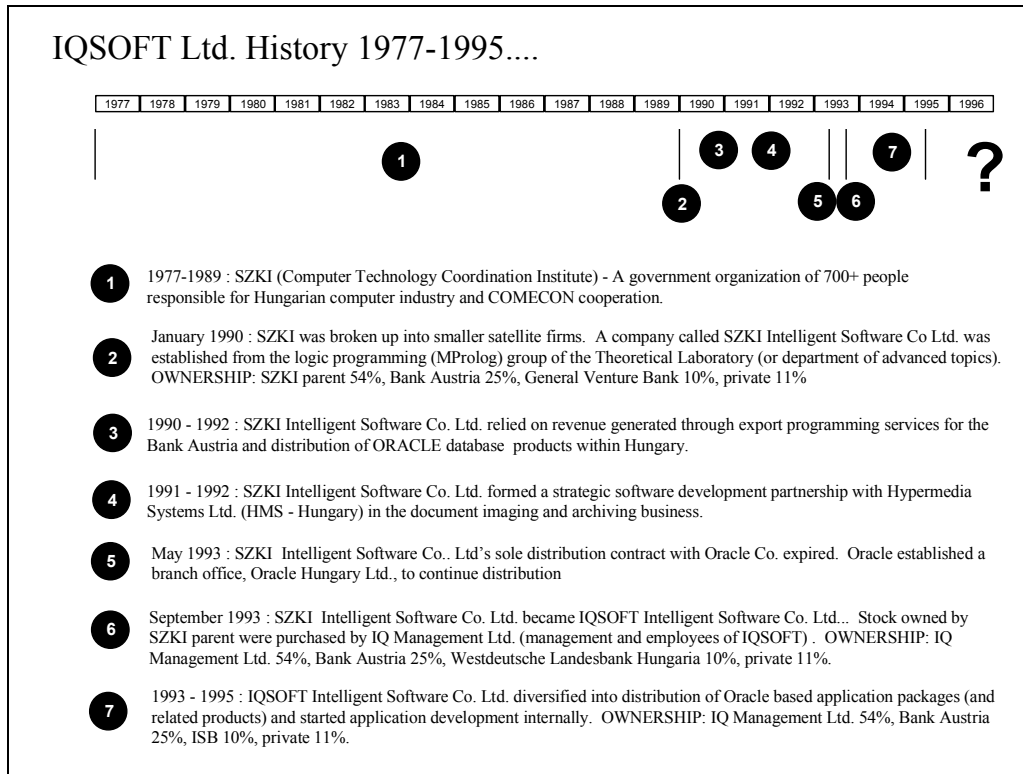
FIGURE 1

Several milestones in IQSOFT Ltd.'s. history are depicted in Figure 1. When SZKI Intelligent Software Company Ltd (now IQSOFT Ltd.) began independent operations in 1990, its activities centered on artificial intelligence research and data base implementation. The goals where outlined by Balint Domolki as:

- "The development of intelligent computer applications"
- "MProlog based tool development, mainly to support internal development activities"
- "Participation in research projects to support the preparation of the future activities"
- "Distribution of imported software"

Balint identified the primary company objectives for the first year of operations as: "securing the independence of the company's operations and maintaining its financial stability, while at the same time creating a basis for future development and expansion."

Two major revenue sources were established during the first year of operation; application development projects for the Bank Austria, and distribution of Oracle products in Hungary. In 1991, Balint saw the extension of business activities beyond these two sources as "absolutely necessary for maintaining the stability of the company." Thus, the goal for 1992 was to "identify new directions and to provide the preconditions for such an expansion, both in terms of the staff's skills and the market connections of the company." [10]

The 1992 "new directions" were identified as:

- "Oracle Applications" - this was an expansion of the Oracle Database distribution business to include the integration of user applications. This shifted the companies role from a simple distributor to a "value added reseller".
- "Banking Software" - this was an expansion of the joint project activity started with the Bank Austria to develop some of the applications into marketable products.

- "Archiving Systems" - expansion into the field of document handling systems based on imaging techniques.
- "User Interfaces" - to capitalize on the interfacing problems created by the complex new software environments (like OS/2), where specialized skill requirements would provide good consulting opportunities."

The dominance of Oracle distribution and Bank Austria projects in the company's revenue bases continued through 1992, "accounting for approximately 85-90% of all revenue." In May, 1993, IQSOFT Ltd.'s market position was shattered. IQSOFT's exclusive distribution contract with Oracle Corporation expired. Some hoped that Oracle Company (USA) would buy a majority stake in SZKI Intelligent Software Company Ltd., but instead, Oracle Company (USA) decided to establish an independent branch office in Hungary and hire some key individuals from SZKI Intelligent Software Company Ltd. (now IQSOFT Ltd.). This move put the company in crisis.

Due to previous contract commitments and a slow start by Oracle Hungary, the company had some time to refocus and avoid bankruptcy. In June of 1993, the management and employees bought a majority of SZKI Intelligent Software Company Ltd., and the name was changed to IQSOFT Intelligent Software Company Ltd. (or IQSOFT Ltd.). The management was forced to rely heavily on the success of the "new directions" strategy that began in 1992 for financial existence. The evolutionary intent of this strategy had to be quickly changed to revolutionary [11].

IQSOFT Ltd sought quick expansion in the database applications and the import software distribution markets, attempting to capitalize on the emerging sectors within Hungary (Figure 2 Hungarian Market). The important government contacts, continued joint projects with the Bank Austria, employee investment in the company, and luck all played roles in IQSOFT's ability to remain solvent during this critical period. The financial performance ratios of IQSOFT Ltd. highlighted the situation and the eventual recovery in 1994 (Exhibit B: IQSOFT Ltd's income statements 1991-1994; Exhibit C: IQSOFT Ltd's balance sheets 1991-1994).
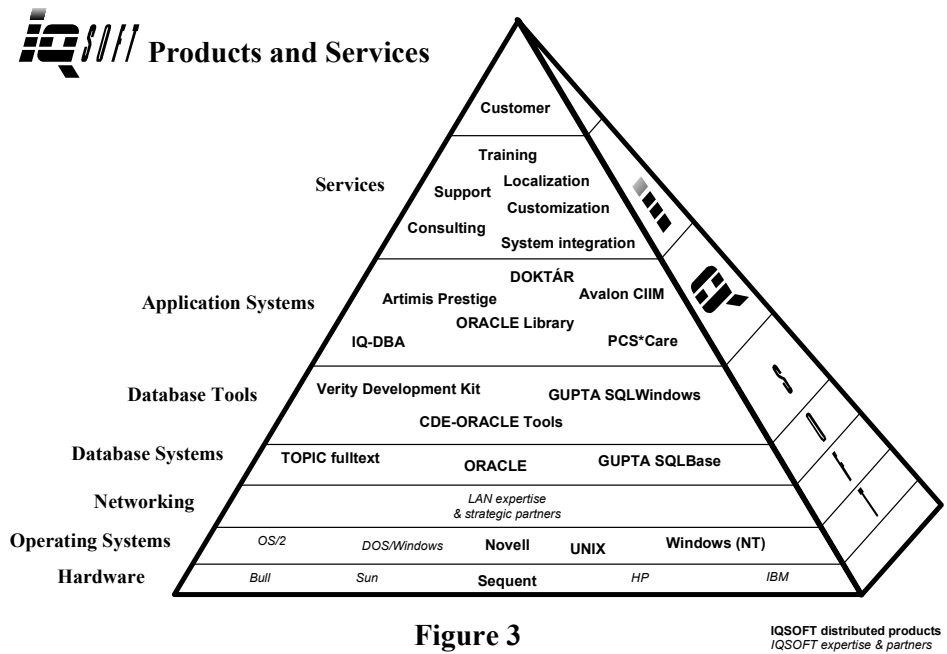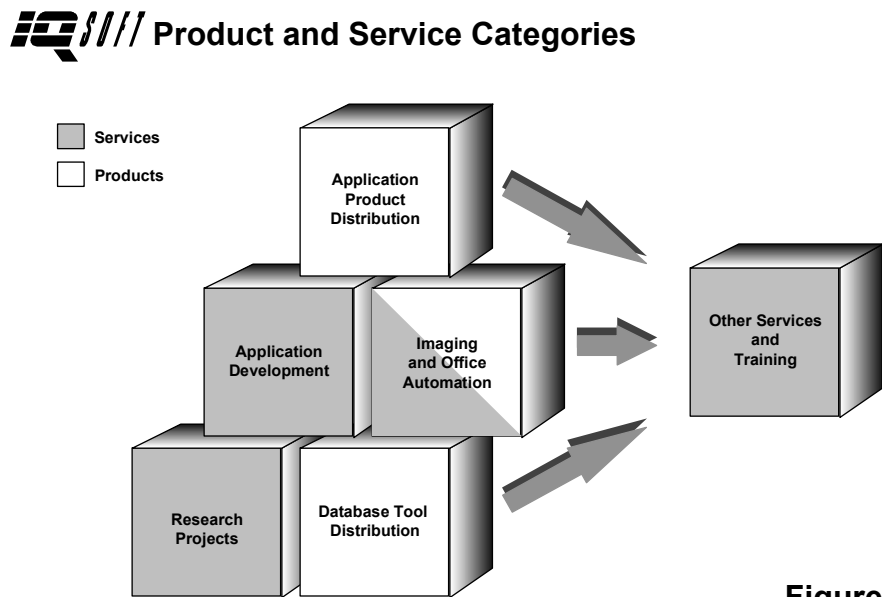

IQ/// 's Hungarian Market
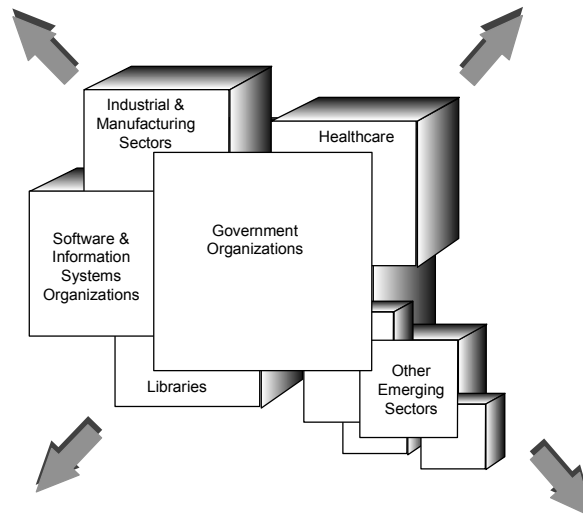
Figure 2

Despite IQSOFT Ltd's difficult situation the company continued to grow, with a greater need for non-technical support (sales/marketing) as the product mix changed. The organization also evolved to accept this slow growth. This evolution can be tracked in Exhibit D (IQSOFT Ltd's Organization from 1992-1994).

The forced acceleration in IQSOFT Ltd's diversification plans left the company with a large product assortment that spanned the information technology markets needs. The product pyramid gives an indication of the products and their relative position in the hierarchy of systems integration (Figure 3: Product Pyramid). With this product portfolio, the company began to formulate a strategy that would position them as "systems integrators" ("systems integrators"

IQ//// Products and Services

		Customer				
Services		Training				
	Support	Localization				
		Customization				
	Consulting	System integration				
Application Systems		DOKTÁR				
	Artimis Prestige		Avalon CIIM			
		ORACLE Library				
	IQ-DBA		PCS*Care			
Database Tools	Verity Development Kit		GUPTA SQLWindows			
		CDE-ORACLE Tools				
Database Systems	TOPIC fulltext		ORACLE	GUPTA SQLBase		
Networking		LAN expertise & strategic partners				
Operating Systems	OS/2	DOS/Windows	Novell	UNIX	Windows (NT)	
Hardware	Bull	Sun	Sequent		HP	IBM

Figure 3

IQSOFT distributed products
IQSOFT expertise & partners

are those firms that can provide complete solutions to a customers information processing needs; i.e. they should have strengths in all areas of the hierarchical pyramid).

The "new directions" strategy was modified to reflect the complete solution "systems integrator" that the Hungarian consumer was demanding. [12] The new products and services which the firm offered, needed to address the emerging market environment and the market expectations of a "systems integrator." IQSOFT had a combination of products and services that it felt addressed the market's needs (Figure 4: Product and Service Categories").

IQ//// Product and Service Categories

Services
Products

Application Product Distribution

Application Development

Imaging and Office Automation

Other Services and Training

Research Projects

Database Tool Distribution

Figure 4

By 1995, IQSOFT Ltd had developed a complex list of activities (exhibit E) focused on six main business areas (Figure 5: Business Areas). Figure 5 identifies the major business areas along with the major activities performed in each. The manpower, revenue projections, and average salary requirements for 1995 are included in exhibit G.

Organizational issues, market forces, and competitive forces would all determine whether the current status of IQSOFT Ltd. would be sustainable.

IQ∥∥∥ Business Areas (Main Activities)

gupta

Main Activities
• RDBMS data access applications
• RDBMS Gupta tool distribution
• Gupta RDBMS distribution
• Product training
• Technology training
• Software system integration

doktar

Main Activities
• Fulltext data access apps.
• Imaging and data archiving applications
• Product training
• Technology training
• Mixed system integration

sequent

Main Activities
• Sequent distr.
• After sales service

R&D

Main Activities
• Funded research projects
• Expert system applications
• Technology training
• Software system integration

oracle

Main Activities
• Integrated system applications
• Oracle RDBMS distribution
• Product training
• Technology training
• Concept training
• Software system integration

other

Main Activities
• Product training
• Technology training
• Concept training
• After sales service

NOTE: Boxes are shown to scale (by projected 1995 revenue)

Figure 5

IQSOFT Ltd's Competitive Position

IQSOFT Ltd.'s market position was one of software distributor. Although there were some efforts to forward integrate into systems integration and backward integrate into software development, the main revenue producing activity remained software distribution. As the Hungarian information systems market matured, an environment that benefited the vertically integrated firm was created. This left IQSOFT Ltd. competing between the large hardware/software developers and the large information technology-consulting firms.

The hardware suppliers were beginning to forward integrate to get involved in the highly profitable consulting business. Firms such as IBM, HP, Digital, Compact, and Bull all had a significant presence in Hungary. These firms sometimes used local systems integrators (like IQSOFT Ltd.) to fill the missing gaps in their own resources, but in the lower risk, higher volume, business areas they continually sought to internalize these activities.

The consulting firms were also seeking the advantages of vertical integration. To better position themselves for future consulting business, the consulting firms were backward integrating to take on more responsibility for the entire information system design and implementation. Firms such as EDS and Anderson were becoming significant competitors in this vertically integrated marketplace.

The companies without the capital to vertically integrate were being forced to partner with the stronger, more respected, international firms and thus, assumed the role of a weaker partner. They were becoming a supplier of labor for the stronger firms that would reap the profits.

The key industry and government contacts were becoming less effective in securing new business opportunities. The international reputations and market presence of the large multinationals were beginning to take their toll on the smaller independents. IQSOFT was being forced to make some very difficult decisions regarding its future. The organizational structure was being strained by both the number of activities and the number of people that were now part of IQSOFT Ltd.. Due to traditional values (there had been no significant change in management since the company was founded), emotions sometimes influenced business decisions.

The company had fought to keep its identity, as a small company with a friendly, almost family-like environment. A desire to maintain this environment, fear of losing control, and traditions (cultural and historical) all played a role in the current position of IQSOFT on the Hungarian market. These same factors would impact the acceptance of any new organizational structure.

Within the management team, there existed some disagreement regarding IQSOFT Ltd.'s future strategic direction and how the organization should be structured to achieve the firm's goals. The entire management team agreed that the organization would have to be flexible enough to sustain some growth, however, there was disagreement regarding the magnitude and direction of that growth. There were also different perspectives on which areas should be targeted for change and how the organization's limited resources should be allocated.

BALINT DOMOLKI (MANAGING DIRECTOR) [16]

The managing director, Balint Domolki, summarized his position on the organization by stating that "IQSOFT Ltd.'s organization structure should emphasize the Hungarian domestic marketplace as the core business and enhance our ability to execute a slow growth strategy. There needs to be an focus on finding new complementary products to add to the current portfolio and a renewed vigor in selectively developing new products which have a identifiable Hungarian market. To finance these activities, IQSOFT's management must be freed from line responsibilities so that they can seek additional outside capital investment from Hungarian sources."

Balint argues that any reorganization proposal must consider IQSOFT's competitive environment and it historical values and traditions. These considerations led to the identification of several strategic objectives that would be central to Balint's vision of IQSOFT Ltd.'s future and provide the scale along which the organizations success would be measured.

"It is imperative to strengthen IQSOFT's relationship with customers and suppliers. The real profitability in this business comes from establishing long term relationships with customers and providing the necessary after sales service." Since, "The service part of IQSOFT's business is the most profitable and the fastest growing," focus should be placed on the systems integration and consulting portions of the portfolio. "There are several products which continue to be a drain on IQSOFT's financial resources," these "non-performing" products should be eliminated from the portfolio.

"IQSOFT Ltd. has a tradition of active international research activity. I am committed to continuing the building of IQSOFT's international reputation through joint research activities. Any reorganization must continue to provide a central role for research."

"I am convinced that our current structure is hindering our pursuit of these objectives. We need to make some changes. I have reached the traditional retirement age (60 in Hungary). In the next couple years, IQSOFT Ltd. will have to find my replacement.   Grooming someone to take my position will have to be a priority of this reorganization."

JULIA SIPKA (COMMERCIAL DIRECTOR) [16]

The commercial director, Julia Sipka, expressed a slightly different perspective on the future direction for IQSOFT Ltd.. "IQSOFT has two strategies for maintaining the financial stability of the company. The first is to continue the same slow steady growth that was exhibited in the past." Julia defines slow growth in terms of manpower, which she specified as 5-10 people per year. The second strategy is "radical growth." Radical growth would require the creation of profit centers and a doubling in manpower. Although the second alternative is attractive, it creates some problem for which the commercial director could not see any immediate solutions.

First, "Radical growth through profit centers posses a significant risk to the stability of the IQSOFT Ltd.. In the information solutions business there is no method to stop these new profit centers from becoming independent businesses. The assets within each profit center would be concentrated in the talents and minds of the individuals. Since there is little dependency on the parent company infrastructure to make the business successful, these assets could easily be transferred to a new business."

Secondly, "financing this radical growth would be impossible under the current capitalization structure. The company's current capital base would not justify such an expansion. Bank loans backed by company asset values are the current method for financing projects and could not be extended to this growth activity."

Even though the radical growth alternative created some interest from the IQSOFT Ltd.'s supervisory board (board of directors) and the managing director, the current situation did not require such a radical departure from the status quo. Instead Julia would recommend "a focus on product module development for export, product distribution in Hungary, localization of software and large project systems integration." Whatever growth this strategy would

require (probably 10% per year) would be acceptable. Thus, the new organization should be designed to focus on achieving several critical objectives.

Foremost, the focus should be placed on international projects. "Export should become 20-30% of the company's total business." This was believed to be important "because it gives an independent outside measure of profitability and performance of the business." Furthermore, "since people are only differentiable asset, the organization must allow an environment which keeps the employee's satisfied." This can be done by "offering interesting 'international projects', good working atmosphere, and a good a salary. Any new organization must maintain these important dimensions."

Historically, IQSOFT's distribution activities were emphasized. These activities should be considered "short term and be dropped if necessary from IQSOFT Ltd.'s offering." Furthermore, IQSOFT's efforts should be directed at establishing "closer relationships with the hardware vendors (IBM, HP, etc.) in Hungary as opposed to consulting firms (EDS, Anderson, etc.). The hardware vendors are not a threat to IQSOFT Ltd.'s activities and wont be for at least 10 years because it is difficult for them to employ enough experts in the field to match a company like IQSOFT Ltd.. It would require these hardware companies to pursue radical growth. Hungary has had bad experiences with the big 6 consulting firms. They came into Hungary thinking they were going to make big profits fast, but instead, they severely damaged there own reputations and credibility because they hired inexperienced individuals which could not deliver on what was promised."

TAMAS LANGER (TECHNICAL DIRECTOR) [16]

From the technical director's, Tamas Langer's, perspective, "IQSOFT is involved in too many projects and there needs to be a focus within the domestic market. The basic mix/structure of activities undertaken by IQSOFT Ltd. does not need to change but the current staff and organizational structure is not capable of handling the volume of activities."

"The future for IQSOFT Ltd. will be in providing its domestic customers with complete solutions to their information processing problems. To reach this next level of activity will require some minimal growth in people and a more significant growth in capital. IQSOFT Ltd. will have to find some financial investors, willing to allow IQSOFT Ltd to grow, rather than the strategic investors, looking for low cost labor and a easy way to enter the Hungarian market. Thus, we need to structure the organization to make IQSOFT attractive to these investors."

"Export activity is not the future for IQSOFT. Our development costs are too high for Western companies to contract with us. It will be too difficult for us to develop an exportable product given the current organizational competencies. Even when we look at exporting IQSOFT services to the East (Romania, Ukraine, Russia, etc.), we find too many good local firms providing the same services with lower costs. In Central/Eastern European markets where we do see opportunities there exists a general distrust in Central/Eastern European companies (IQSOFT would be considered an Central/Eastern European company). In these markets we find reputable and respected Western firms establishing local offices."

"The major problem with IQSOFT Ltd.'s domestic market is that it is too small to sustain the number of companies which currently offer systems integration services in Hungary. So, IQSOFT is caught in the middle, without much opportunity in the export market and not a lot of room to maneuver in the domestic market. IQSOFT Ltd.'s strength is that it stands on several legs, we aren't just a software developer, distributor, integrator, etc. but we participate in a variety of related systems integration activities. With proper focus on the domestic market, IQSOFT Ltd can continue to operate profitably."

Tamas argues that leveraging the company's internal core competencies, and recognizing the lack of export opportunities and changes in the domestic marketplace, are the keys to a successful reorganization plan. For IQSOFT to achieve its strategic objectives it would have to change in several important ways.

First, IQSOFT must change the organizational structure. "70 people is the limit to the current organizational structure, beyond this (70 people) the organization will no longer be able to function." This new organization must focus on a limited number of business areas. "A number like 5 business areas seems appropriate; possibly imaging, 2-3 database application areas, and some development (some independent and some related directly to applications)."

The new organization must allow management the time to locate a financial investor "which is critical to the future life of IQSOFT. There are two choices for increasing the capital base for the company. The first, keep the capital structure the same and increase the investment of each shareholder. This cannot realistically be done, because the current shareholders (employees) don't have the money. The second option is to locate outside

investors. Most of the interest comes from strategic investors, looking for a way to enter the Hungarian market or for cheap project labor; for various reasons this has not proven to be sustainable long term. This leaves us with purely financial investors."

"Any change must increase productivity per employee in a measurable way.   In my opinion money productivity per employee is the best measure of success and IQSOFT Ltd.'s current ratio is unacceptable. We have lost focus on core competencies. IQSOFT needs to reestablish its core competency focus in the areas of Oracle databases. The market sees IQSOFT as an Oracle database company and we should be able to capitalize on this."

ADDITIONAL INSIGHTS

For any recommendation to be accepted the proposed organization would have to address the strategic objectives of these managers. To actually be successful it would have to overcome the inevitable resistance of influential employees. One project manager commented that "there is no critical need for big changes, the company is operating normally." Another mentioned, "I don't like changes. We have been the same organization for 25 years and we should stay the same." This resistance to change can also be seen in the comments of another employee, "IQSOFT is a risky company to work at (in relation to others), but we have a great atmosphere and you are able to learn a lot."

Other employees seemed to recognize the need for change, "After speaking with colleagues at other companies, IQSOFT definitely has the best atmosphere for working, however, it is better to lose the atmosphere than to lose your job!" Some even identified problems that needed to be addressed, "The problem is that each product manager is not responsible for revenues," and "We need to reduce the number of products. There are too many different products that it is impossible for the sales people to know about all of them."

Still others saw a much deeper issue. "There are some people here that need to be gotten rid of. The company was a socialist organization and when it was formed it inherited a lot of baggage. The company can no longer afford to carry this baggage. As long as you have some people working 11 hours a day while others work 4, there are going to be problems."

RESOLUTION ....

Balint, Julia and Tamas needed to set the course for IQSOFT Ltd.'s future.

Exhibit A: The management of IQSOFT Ltd. [7]

Dr. Balint Dömölki - Managing Director

Dr. Dömölki earned his degree in mathematics (ELTE, Budapest in 1957) and his Ph.D. in programming theory (Moscow University Russia in 1966). In 1957 he joined a team responsible for developing the first Hungarian computer. From 1957 until 1965 he headed the development effort at the MTA Computer Laboratory in the field of software research and development. He held leadership positions at INFELOR and SZÁMKI from 1965 until 1977. In 1977 he was appointed laboratory and scientific director at SZKI, where he remained until 1989.

In 1989 Dr Dömölki moved the majority of his staff to IQSOFT. Between 1985 and 1990 he served as NJSZT president. In 1988 he received the Hungarian State Award for his contribution to the development of MProlog. Fluent in Hungarian, Russian and English.

Dr. Julia Sipka - Commercial Director

Dr. Sipka received her degree in economics from the International Economic Relations University (Moscow) and an advanced degree in international economic relations from the Budapest University of Economics (Budapest, 1982). In 1976 she was hired by SZKI to manage the company's eastern connections, and in 1982, accepted responsibility for marketing Hungarian developed software products internationally.

She helped found IQSOFT in 1989, where she assumed the role of commercial and marketing director. At IQSOFT she has led many large, commercially successful projects. Fluent in Hungarian, Russian and English.

Dr. Tamas Langer - Technical Director

Dr. Langer graduated with a degree in mathematics (1972) and an advanced degree in computer science from ELTE, Budapest (1976). From 1972 until 1983 he worked as a research fellow and later as a department head for INFELOR, SZÁMKI and SZÁMALAK. In 1983 he joined the Theoretical lab of SZKI as the development project manager for the MProlog system.

He continued his leadership role in 1989 when he joined IQSOFT as technical director. He is co-author of three books in the field of system programming, programming languages and programming methodology. In 1988 he received the State Award for his contribution to the development of MProlog. Fluent in Hungarian and English.

Exhibit B: IQSOFT Ltd.'s Income Statements 1991-1994

IQSOFT Intelligent Software Company Ltd.
Income Statements
For the Years Ended December 31 (1,000,000 HUF)

	1991	1992	1993	1994
Gross Income				
Domestic	103.3	165.8	306.6	263.4
Export	53.3	74.4	58.0	74.3
Total Gross Income	**156.6**	**240.2**	**364.6**	**337.7**
Cost of Sales				
Product & material costs	65.5	115.0	203.0	150.9
Subcontracting costs	4.9	3.5	14.5	10.0
Depreciation	1.2	6.3	11.8	16.3
Labor	44.9	68.8	82.4	89.2
Total Cost of Sales	**116.4**	**193.5**	**311.7**	**266.3**
Expenses				
Overhead	**30.1**	**35.9**	**52.8**	**60.7**
Operating Income (EBIT)	**10.0**	**10.7**	**0.1**	**10.7**
Other Income	4.0	6.0	6.5	1.5
Other Expenses (Interest)	3.5	3.8	2.4	5.2
Net Earnings Before Taxes (NEBT)	**10.5**	**12.9**	**4.1**	**7.0**
Taxes	4.0	4.2	0.6	1.4
Net Earnings After Taxes (NEAT)	**6.6**	**8.7**	**3.6**	**5.7**
Number of Employees	38	46	61	63
Average HUF/USD exchange rate	74.74	78.99	92.5	102.0
Inflation rate	35%	23%	23%	17%

NOTES
    (1) Financial information for 1990 is not available due to major accounting law changes
    (2) All data was obtained from company documentation and adapted to US reporting formats

Exhibit C: IQSOFT Ltd.'s Balance Sheets 1991-1994

Balance Sheets
For the Years Ended December 31 (1,000,000 HUF)

	1991	1992	1993	1994
Assets				
Current Assets				
Cash and Marketable Securities	23.0	29.7	19.6	5.0
Accounts Receivable	39.2	52.6	111.8	77.6
Inventory	0.8	9.1	41.2	4.2
Other Current Assets	0.0	0.8	1.4	0.9
Total Current Assets	**63.0**	**92.2**	**174.0**	**87.8**
Fixed Assets				
Property, Plant, and Equipment	**13.6**	**17.4**	**34.5**	**38.3**
Other Assets	**6.3**	**6.5**	**5.8**	**7.9**
Total Assets	**82.9**	**116.1**	**214.2**	**134.0**
Liabilities and Equity				
Current Liabilities				
Taxes Payable	0.0	0.0	0.0	0.0
Accounts Payable	23.0	43.1	153.6	51.9
Accrued expenses	5.3	4.2	3.4	7.4
Loans Payable	2.5	3.6	7.0	22.0
Other Current Liabilities	25.1	34.8	17.0	25.4
Total Current Liabilities	**55.9**	**85.6**	**180.9**	**106.7**
Long Term Debt (LTD)	**0.0**	**0.0**	**5.5**	**0.0**
Equity				
Stock	23.9	23.9	23.9	23.9
Retained Earnings	2.6	5.0	2.0	1.5
Capital Reserve	0.5	1.6	1.9	1.9
Total Equity	**27.0**	**30.5**	**27.8**	**27.3**
Total Liabilities and Equity	**82.9**	**116.1**	**214.2**	**134.0**

NOTES
(1) Financial information for 1990 is not available due to major accounting law changes
(2) All data was obtained from company documentation and adapted to US reporting formats

IQSOFT's Organization 1992 *

Secretariat **2**

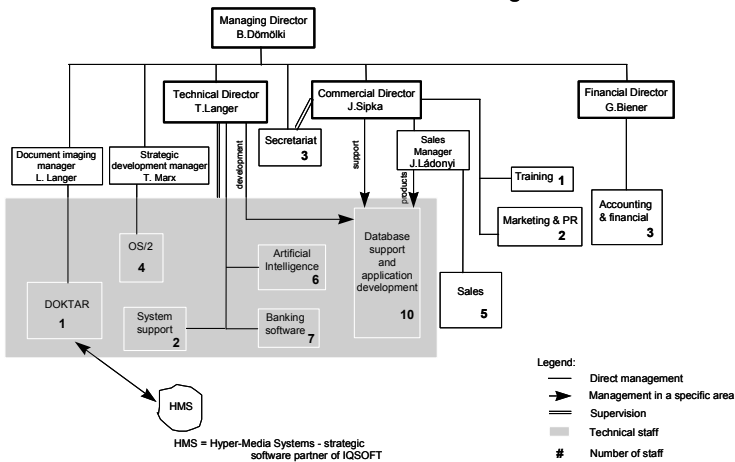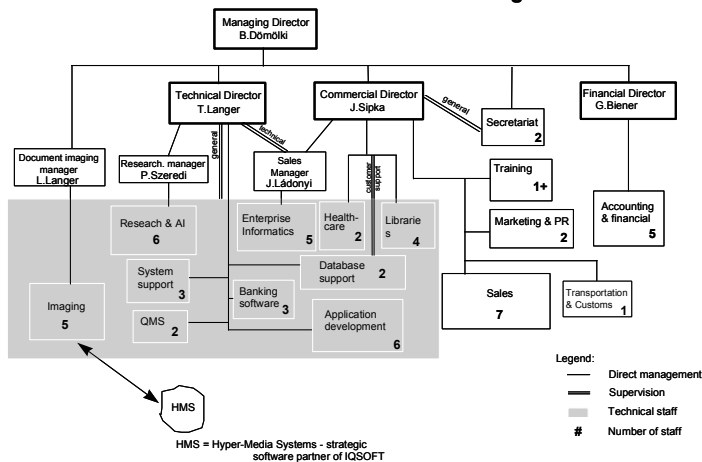Managing Director
B.Dömölki

Technical Diirector
T. Langer

Commercial Director
J. Sipka

Finacial Director
G. Biener

Archiware System
(L. Langer) **1**

Applications
3 (3)

Bank Austria Projects **12**

OS/2
(T. Marx) **3**

New Product
Preparation **4**

Parallel Prolog **1**

IQSOFT Net **1**

Sales
J. Ladonyi **3**

Technical Assitant **1**

Marketing and
Public Relations **2**

DB Support Manager
M. Pap

User Contact **2**

Platform Experts **6**

Special Consulting **2**

Accounting and
Finance **3**

HMS

HMS = Hyper-Media Systems - strategic
software partner of IQSOFT

Legend:
— Direct management
Number on staff
(#) Number to be added to staff

* Organization as described in 1992 annual report

IQSOFT's Organization 1993 *

Managing Director
B.Dömölki

Technical Director
T.Langer

Commercial Director
J.Sipka

Financial Director
G.Biener

Document imaging
manager
L. Langer

Strategic
development manager
T. Marx

Secretariat **3**

Sales
Manager
J.Ládonyi

Training **1**

Accounting
& financial **3**

development

support

products

OS/2 **4**

Artificial
Intelligence **6**

Database
support
and
application
development **10**

Marketing & PR **2**

DOKTAR **1**

System
support **2**

Banking
software **7**

Sales **5**

HMS

HMS = Hyper-Media Systems - strategic
software partner of IQSOFT

Legend:
— Direct management
→ Management in a specific area
= Supervision
▨ Technical staff
Number of staff

* Organization as described in 1993 annual report

IQSOFT's Organization 1994 *

Managing Director
B.Dömölki

Technical Director
T.Langer

Commercial Director
J.Sipka

Secretariat **2**

Financial Director
G.Biener

general

Document imaging
manager
L.Langer

Research. manager
P.Szeredi

Sales
Manager
J.Ládonyi

Training **1+**

Accounting
& financial **5**

general

technical

customer support

Reseach & AI **6**

Enterprise
Informatics **5**

Health-
care **2**

Librarie
s **4**

Marketing & PR **2**

System
support **3**

Banking
software **3**

Database
support **2**

Imaging **5**

QMS **2**

Application
development **6**

Sales **7**

Transportation
& Customs **1**

HMS

HMS = Hyper-Media Systems - strategic
software partner of IQSOFT

Legend:
— Direct management
▬ Supervision
▨ Technical staff
Number of staff

* Organization as described in 1994 annual report

Exhibit D
IQSOFT Ltd's Organization from 1992-1994

Exhibit E: IQSOFT Ltd. Activities *

IQSOFT Product	Product Type	Supplier	IQSOFT Role	Portfolio Position	Main Target	Secondary Target
Product Training	Education	IQSOFT	Training	Service	All	none
Software System Integration	Consulting	IQSOFT	Consulting	Service	All	none
Technology Training	Education	IQSOFT	Training	Service	All	none
Mixed System Integration	Consulting	IQSOFT	Consulting	Service	All	none
After Sales Service	Maintenance	IQSOFT	Providing	Service	All	none
Concept Training	Education	IQSOFT	Training	Service	All	none
DOKTAR ArchiWare	Custom	IQSOFT/HMS	Developing	Core	Government	Service organizations
DOKTAR Custom Applications	Custom	IQSOFT/HMS	Developing	Service	Government	All
Verity Topic	Package	Verity	Distributing	New	Government	Library
DA-DOSSZIE	Package	HMS	Distributing	Core	Government	Service organizations
JOGTAR	Package	HMS	Distributing	Core	local government	legal firms
Microsoft Products	Package	Microsoft	Distributing	Distribution	none	none
Handwriting Recognition	Custom	IQSOFT/Recognita	Developing	Project	Postal Service	Government
Novell Products	Package	Novell	Distributing	Distribution	none	none
Windows NT	Package	Microsoft	Distributing	Distribution	none	none
Verity VDK	Tool	Verity	Distributing	New	IS organizations	SW developers
Gupta SQLWindows	Tool	Gupta	Distributing	Core	SW developers	IS organizations
Gupta Custom Applications	Custom	IQSOFT	Developing	Service	Government	All
Gupta SQLBase	Database	Gupta	Distributing	Distribution	Government	IS organizations
IQ-DBA	Tool	IQSOFT	Developing	New	IS organizations	SW developers
IQ-Class Library	Tool	IQSOFT	Developing	New	IS organizations	SW developers
Gupta Quest	Tool	Gupta	Distributing	Distribution	IS organizations	SW developers
Oracle Libraries	Integrated	Fretwell	VAR	Core	Libraries	None
PCS*Care	Integrated	PCS	VAR	Core	Hospitals	Medical Centers
Avalon CIIM	Integrated	Avalon	VAR	Core	Manufacturing	None
Hungarian HR Management	Package	IQSOFT	Developing	Distribution	Manufacturing	All
Hungarian Payroll	Package	IQSOFT	Developing	Distribution	Manufacturing	All
Artemis Prestige	Package	Lucas	VAR	Core	Manufacturing	Banking
Oracle Custom Applications	Custom	IQSOFT	Developing	Service	Government	All
Artemis Schedule Publisher	Package	Lucas	Distributing	Distribution	Manufacturing	Banking
Oracle7 Server	Database	Oracle	Destributing	Distribution	Government	All
Oracle Case	Tool	Oracle	Distributing	Distribution	IS organizations	SW developers
Oracle CDE Tools	Tool	Oracle	Distributing	Distribution	IS organizations	SW developers
Geldhandelsprogram	Package	IQSOFT	Developing	Project	Bank Austria	none
ABS	Package	IQSOFT	Developing	Project	Bank Austria	none
ZEXPERT	Tool	IQSOFT	Developing	Project	Bank Austria	none
AI Products	Research	IQSOFT	Developing	Project	International R&D Funds	none
Funded Research	Research	IQSOFT	Researching	Research	European Funds	World research grants
Sequent	Hardware	Sequent	Distributing	Core	Government	Large Companies

* Above terms are defined in Appendix F

Exhibit F: Definition of Terms (part 1)

Term	Definition
I. IQSOFT Products	
ABS	ABS is a consulting system designed to provide small investors with information on expected investment returns. ZEXPERT application
After Sales Service	services provided to customers in support of the products sold
AI Products	developement/research activities related to the use of expert systems. ZEXPERT application development
Artemis Prestige	a project management software product. High-end, multi-user capabilities.
Artemis Schedule Publisher	a project management software product. Low-end, single user capabilties
Avalon CIIM	an integrated enterprise automation system
Concept Training	training related to concepts. Not associated with a specific product
DA-DOSSZIE	software interface for data storage and retrieval
DOKTAR ArchiWare	office automation system for the storage and retrieval of office documents
DOKTAR Custom Applications	complex office applications using DOKTAR ArchiWare as the core product.
Funded Research	international research projects which provide grants to cover expenses
Geldhandelsprogram	an information system designed to support the whole range of interbank loan and securities transaction processes
Gupta Custom Applications	application using Gupta products as the development tools
Gupta Quest	a query and reporting tool
Gupta SQLBase	a single user multi-tasking copy of a full function SQL database
Gupta SQLWindows	development system for building multi-user client-server database applications for windows
Handwriting Recognition	a custom system developed for the Hungarian Post Office to archieve check documentation
Hungarian HR Management	a human resource management module. Database interface for the recording of employee information.
Hungarian Payroll	a Hungarian payroll management module
IQ-Class Library	a database of Gupta tools
IQ-DBA	tool for database administrators to help with database structure editing, navigating, and browsing
JOGTAR	a Hungarian law database, distributed on CD-ROM
Microsoft Products	general office automation products supplied by Microsoft and integrated into complex information management systems
Mixed System Integration	integration of both software and hardware products
Novell Products	Novell local area network products
Oracle Case	CASE tools for Oracle databases
Oracle CDE Tools	developer tool kit for Oracle databases
Oracle Custom Applications	custom application using Oracle tools
Oracle Libraries	an integrated library management system
Oracle7 Server	the Oracle database system
PCS*Care	an integrated hospital management system
Product Training	specific training related to the installation and use of a product
Sequent	multiprocessor computer system manufactured by Sequent
Software System Integration	integration of several software products
Technology Training	training related to general technologies used in software products. Not associated with a specific product
Verity Topic	full-text information retrieval system
Verity VDK	development tool for full-text retrieval applications
Windows NT	an advanced operating system software
ZEXPERT	a banking expert system platform developed using MProlog

Exhibit F: Definition of Terms (part 2)

Term	Definition
II. Product Types	
consulting	products which involve extensive application knowledge and interaction with customers
custom	products which are modified to meet unique customer requirements
database	products which have the primary function of storing data
eduction	products which invlove the instruction and training of customers
hardware	products which are primarily hardware related.
integrated	products which consist of modules which when integrated can function as a single product
maintenance	activities which are related to maintaining the operation of products sold
package	products that are self contained and do not have to be integrated with other products to be fully functional
research	activities which are focused on studying base technologies
tool	a product that helps people (usually programmers) perform a specific task
IV. Supplier	
Avalon	Avalon Software Inc. USA
Fretwell	Fretwell-Downing Ltd. UK
Gupta	Gupta Corporation, USA
HMS	Hypermedia Systems Ltd., Hungary
IQSOFT	IQSOFT intellegent Software Company Ltd., Hungary
IQSOFT/HMS	Partnership: IQSOFT & HMS, Hungary
IQSOFT/Recognita	Partnership: IQSOFT & Recognita, Hungary
Lucas	Lucas Management Systems, USA
Microsoft	Microsoft Corporation, USA
Novell	Novell Corporation, USA
Oracle	Oracle Corporation, USA
PCS	PCS Spol. S.R.O, Czech Republic
Sequent	Sequent Corporation, USA
Verity	Verity Inc., USA
V. IQSOFT Role	
consulting	providing expert advice to the customer
developing	creating and enhancing software products or modules
distributing	transfer products from the manufacturer to the customer without modification
providing	refers to the distribution of services to customers
researching	investigation into the base technologies for future development activities
training	educating the customer
VAR	VAR = Value Added Reselling; transfer of products from the manufacturer to the customer with major modifications and customizations
VI. Portfolio Position	
core	products which are central to the business strategy
distribution	products which are not important to the business but where the maginal cost of distribution is very low
new	products which have just recently been added to the product portfolio
project	development activities which may or may not lead to future poducts
research	projects focused on generating new knowledge rather than new products
service	activity which involve that transfer of non-material benefits to the customer

Exhibit G: Manpower Requirements

Estimates/Assumptions

Average Labor Charge / person	1.667	MHUF
Average Overhead Charge / person	1.746	MHUF
Exchange rate HUF/$	122	HUF/$
Estimated annual inflation %	20	%

Business Area	doktar	oracle	gupta	R&D	sequent	*Other Activities	non-management overhead	management overhead	Totals	Salary Weight (multiple of labor charge)
Total Manpower Requirement	7	16	7	10	1.5		17.5	4	63	
Sales	1	3	1	0	0.5		0	0	5.5	1.25
Program Management	1	4	1	0	0.5		0	0	6.5	1.75
Application Development	3	1	2	3	0		0	0	9	1.5
Programming	1	6	3	6	0		0	0	16	1.25
Management	1	1	0	1	0		0	4	7	3
Support Overhead	0	1	0	0	0.5		17.5	0	19	1
**Desired Return on Sale (ROS) %	5%	5%	7%	2%	5%					
Estimated Revenues	27.00	60.00	53.00	60.00	10.00	15.00			225.00	