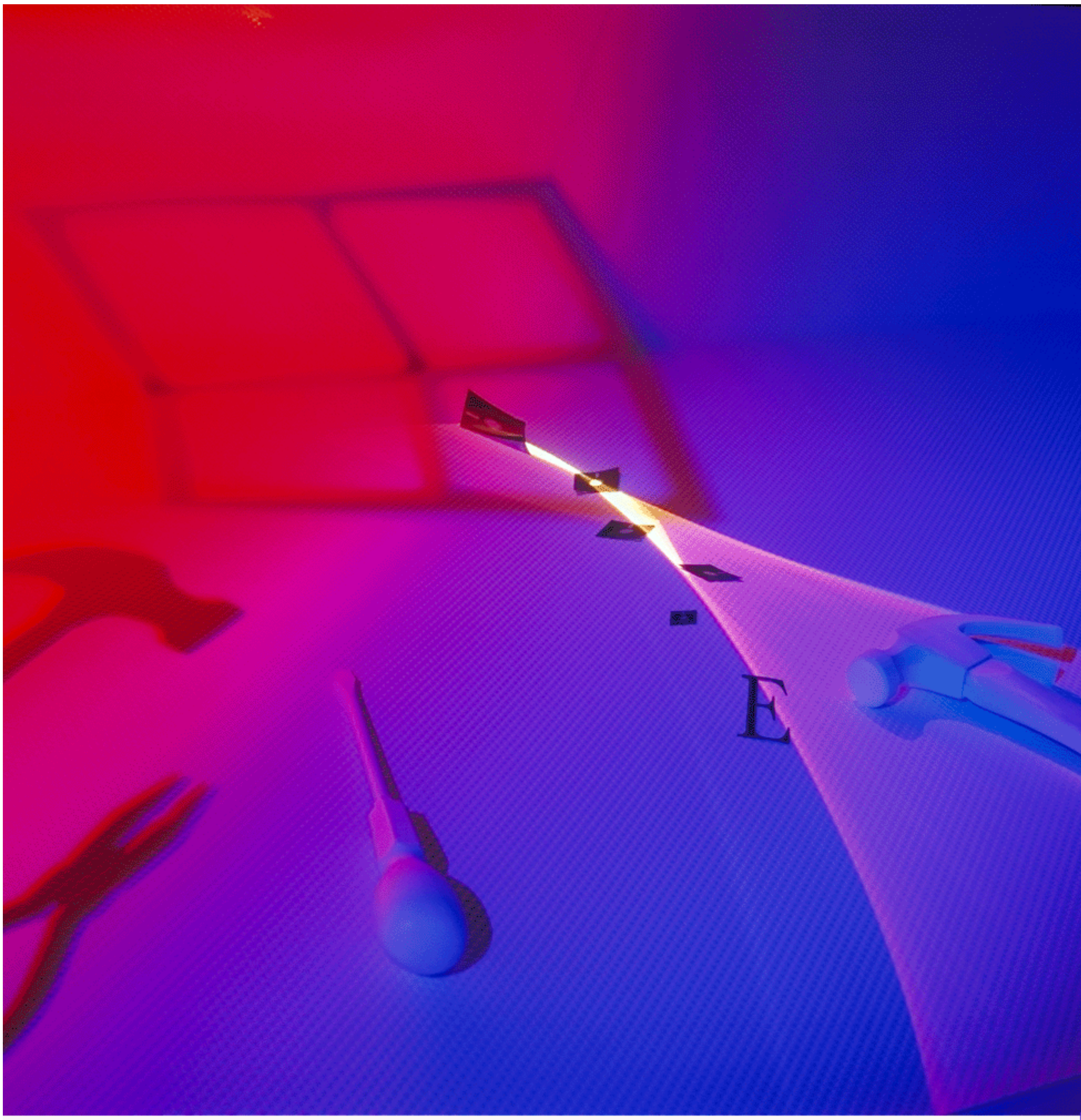

A Perspective on the Irish Software Industry

Barriers to Growth

Opportunities to Scale

Irish Software Association

Select Strategies
Towards Exceptional Performance

Barriers to Growth

OPPORTUNITIES TO SCALE

A Perspective on the Irish Software Industry

Irish Software Association

Select Strategies

The Irish Software Association:
The Voice of the Irish Software Sector

The Irish Software Association (ISA) is the principal trade association for the software industry in Ireland. Our core mission is to promote the common interests of the software sector as a whole, as well as serving as a key resource to member companies by providing an organised forum for the exchange of ideas, sharing of resources and promotion of industry goals and influencing public policy. The ISA assists software companies to start, manage and expand their companies and to help them be successful in global markets.

Select Strategies ... Towards Exceptional Performance

Select Strategies helps technology companies that are struggling to grow revenue, through definition and implementation of organisational process – from strategic market positioning to sales execution. Select Strategies' clients gain effective, pragmatic and scalable solutions that reduce selling cycles, cost of sales, and market entry costs, and increase organisational alignment, sales conversion rates, revenue and profit. Through 'experience-based' strategic sales and marketing consulting and knowledge transfer services, Select Strategies helps the leadership of technology companies grow revenue from the inside out. Unlike traditional consulting companies, our executives are seasoned entrepreneurs, marketing strategists and sales professionals.

Report Author: Donal Daly

Donal Daly is Executive Chairman of Select Strategies. Dividing his time between the United States and Europe, he has created, and led, multiple successful global software companies. He is Chairman of The Customer Respect Group – an international research and consulting firm that specialises in online customer experience. He is acting CEO, Select Selling Inc. – a sales methodology and sales process software company. With Paul O'Dea, his partner in Select Strategies, Donal is co-creator of the Select Selling methodology and co-author of the **Select Selling Sales Fieldbook** (Oak Tree Press, 2004). He has defined, and implemented, sales and marketing strategies for numerous large and small companies in Europe and the US. He is widely published, and is the author, on behalf of the Irish Software Association, of the 2003 and 2004 Industry Outlook Studies, and the 2003 Sales & Marketing Capability Study. Donal has lectured worldwide, is the author of two books, and sits on the board of several high technology companies.

The author would like to acknowledge the exceptional contribution of Paul O'Dea in the creation of this report.

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Introduction

The Government policy that led to the influx of multinational companies to Ireland has delivered dramatic benefit to the economy. One of its consequences has been Ireland's rise to the position of the No. 1 exporter of software, an achievement of which we can be justly proud. However, hidden behind this rosy scenario is a promising but under-nourished indigenous software sector, which today boasts a 16,000-strong workforce. While not without its weaknesses, as well as a certain fragility, the indigenous sector, if appropriately cultivated, has the potential to reach employment of 50,000 by 2010, delivering revenues of €7.5 billion to the economy.

In many ways, the prolonged success of the Irish economy in general translates into a lack of urgency to build our own future in the shape of Irish companies, owned and managed by Irish entrepreneurs and professional managers. But, as has been well signposted by the Enterprise Strategy Group report, the ports and airports of the country soon will be full of departing multinationals as our cost-base increases and the attraction of Ireland as a base for manufacturing decreases. Our future is one that we must build ourselves.

Ireland is not alone in facing this challenge. Most of Europe's software industry is declining in the context of global market growth. Only 1 in 10 of the world's largest software companies is based in Europe, and there are only 4 European software companies with revenue over $1 billion. A report in the *Financial Times* in early April 2005 references "The Demise of the European Software Industry", a publication by Adam Hale, head of European Technology at Russell Reynolds, and cites focus on the US market as one of the factors that drives the success of the few large European software companies. This may be an obvious conclusion, given the size and maturity of the US market for software, but it is a market in which only a tiny number of Irish software companies have succeeded.

The Survey

Select Strategies carried out a survey on behalf of the Irish Software Association in February 2005. The survey was distributed to the indigenous Irish software sector, as well as to other stakeholders interested in the sector. We received 95 responses from 69 companies. The survey analysis that follows has been based on the response of the most senior executive – usually, the CEO – in each of these 69 companies.

The hypotheses that shaped the design of the survey were informed by CEOs, marketing and sales professionals, and the leadership of the technology departments of the more than 200 Irish software companies with whom Select Strategies has engaged over the past 4 years. Much of this interaction was in group settings, through programmes like the SalesSTAR, CREST or Graduate Enterprise Programme initiatives. In other cases, we worked closely with the leadership of these Irish companies, and their international counterparts, helping them address the challenges inherent in growing revenue in the competitive global software market. Coupled with this experience is the contribution of the many other representatives of the Irish software industry, who, through the Irish Software Association, continue to shed light on the strengths and weaknesses of the sector, its barriers to growth and opportunities to scale.

Company size, stage of development, and location might vary from one company to the next, but the important issues remain constant. Innovation, market entry strategies, sales and marketing capability, leadership and motivation, and funding are challenges that all software company CEOs face on a regular basis.

With the increasing level of globalisation in the technology sector, companies need to be of a significant size to survive. The Irish indigenous software sector is fragile – as the survey results make clear. To achieve a viable, self-sustaining, and vibrant software sector, we need to achieve a critical mass, not just in absolute employee numbers or revenue, but in the number of companies that themselves are of significant size in a global context.

The purpose of the survey, and this report, is to highlight some of the barriers to growth experienced by Irish software companies, to propose ways of overcoming these barriers and to identify the opportunities to create scale in the sector. Overall, the recommendations that follow seek to create an environment where Ireland's indigenous software sector can become the leading "home grown" sector in Europe.

Recommendations

The following recommendations derive from the survey results and the challenges that it identifies for Irish software companies in creating scale, coupled with the experience of the Irish Software Association and Select Strategies.

Leadership

Great companies have great leadership. Ireland's experience of building world-class manufacturing capabilities has served our multinational partners and the Irish economy well. But the success we have achieved in this area is not mirrored in management in general and we do not have a ready supply of revenue-oriented leaders.

Apart from the Strategic Marketing and Sales Execution issues referenced below, the software sector needs to expand the capabilities of its companies' leadership and leverage the expertise that exists among successful practitioners, both in the software sector, and the other successful sectors in Ireland.

The ISA should work with other interested stakeholders to create a World Class Leadership Development Programme, to enhance the capabilities of our software company managers, to help them exploit fully the intellectual and emotional capacity of their employees and themselves. Drawing on the proven leadership expertise of other Irish-based companies that are world leaders in their sector should be an integral part of this programme.

In parallel to the Leadership Development Programme, companies need to consider how to strengthen their Board of Directors. An effective Board can be invaluable to the CEO and his / her team. Great Boards add real value and provide experience-based advice and practical assistance to the CEO. They help attract funding, facilitate important business introductions, attract key new hires and assist the CEO in navigating the inevitably choppy waters faced in building a fast-growing business.

Many companies find it difficult to attract high-calibre non-executive directors to support and guide the leadership of the company. Corporate governance issues and the impending Directors' Compliance legislation are serious barriers. **The ISA should work with the appropriate Government**

Departments and other interested parties to identify and implement a mechanism to reduce some of the current disincentives and to encourage seasoned, successful entrepreneurs to become actively involved in high-risk start-ups.

Strategic Marketing & Sales Execution

We have witnessed dramatic improvements in the overall sales and marketing capability of the software sector since we first began to measure it in 2001. The co-operation between the ISA, Enterprise Ireland and FÁS in the SalesSTAR initiative deserves particular plaudits, and the continuation and extension of this programme is essential.

Areas that need further attention, which are not being served adequately today, are Target Market Selection, Market Entry Strategy, Sales Channel and Partnership Development, and Product Management. **The ISA should continue to work with its partners in addressing these key skills areas, and encourage involvement from other interested stakeholders, including the third level education sector.** Specific attention, and perhaps a separate programme, is required for Partnership Development and Selling through Channels.

Funding

The architecture of the funding mechanisms for software companies in Ireland is broken. The absence of sufficient early stage funding stifles early innovation, and places the venture capital community in the illogical position where it has to fund many small projects, rather than raise the standard of the opportunities they choose to support and then invest heavily, but infrequently. The scale of funding – even multi-round or milestone-based – is ineffective, in most cases, and certainly not at the level we need to see if we are to create a number of world-leading companies.

Enterprise Ireland has a very important role to pay in early stage funding, as does 'angel finance'. **It is inappropriate that there is equivalence between the tax treatment of capital gains from high-risk start-ups – perhaps the most important element of our future economy – and the tax treatment of gains from relatively-secure property investments.** The natural consequence of the current tax regime is that there is little incentive to fund the bright new ideas that might propel Ireland forward over the next 10 years. In the US, 'angels' provide 20 times more seed capital and early stage funding than the venture capital community. Tackling this issue will result in more ‘angel finance’ available in the seed capital and early stage investment windows, providing the venture capital community with a wider selection of propositions, from which they can choose a small number for large investments.

Government procurement should set aside 5% of its budget for purchases from EU SMEs. If companies in the Irish software sector get their share of this opportunity, it will serve to provide those urgently-needed ‘first customer reference sites’ that are one of the barriers to attracting significant investment.

Innovation & Commercialisation

At the heart of innovation is a sequence of activities that turns ideas and concepts into reality. Innovation, in the context of this report, is anything that has the potential to bring about a dramatic increase in the scale or size of the organisation. For too long, innovation has been viewed as a mystical black box art – R & D – from which the very occasional new product emerges. The innovation processes in our software companies need to have a broader framework that actively encourages and rewards new products, new ways of serving customers, new delivery processes, new channels and business models.

The European Innovation Scoreboard 2004 confirms that the innovation gap between the EU and the US has not reduced since the adoption of the Lisbon agenda. The US leads Europe in 9 out of the 11 indicators used to compare innovation performance. More worryingly, Ireland is among a group of countries that are ‘losing momentum’.

Thus, we need to address innovation as a matter of urgency. Much of the research being carried out in our colleges is never examined for its commercialisation potential. Industry complains about inflexible practices and unrealistic expectations on the part of the third-level institutions, while their representatives allege miserliness on the part of their would-be commercial partners.

Models, such as that in place at Stanford, work well in other jurisdictions. **The ISA, ICT, Higher Education Authority, Enterprise Ireland, Science Foundation Ireland and Forfás should liaise to form a National Directorate on Software Innovation, whose mission is to encourage and assist Irish SMEs in bringing radical new innovations to market.**

The Directorate should be given significant powers to influence State funding to both universities and SMEs.

Survey Results 1: Landscape

Key Points

- **64% of the founders of the responding companies come from a technical background.**
- **These founders are well-educated: 49% have degrees; 38% have a post-graduate degree or a doctorate.**
- **The responding companies have 2,745 employees in total, with an average of 40 employees per company.**

Profile of Respondents

Two-thirds of those who completed the survey listed their occupation as Chief Executive Officer. The findings of the survey therefore represent the leadership of the Irish software industry.

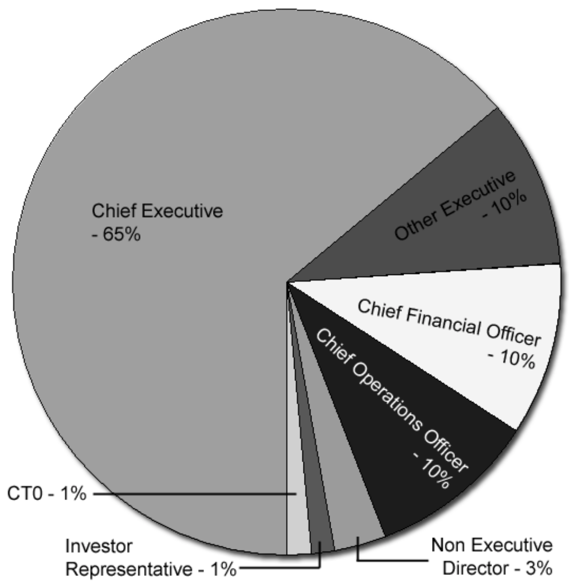

Figure 1: Survey Participants

In addition, there was reasonable representation from the other executive roles in the company, with a surprisingly small participation from the Venture Capital community or other advisors to the indigenous sector.

The start-up entrepreneur profile in the Irish software sector is dominated largely by those with a technical background. For all of the companies represented by this survey, nearly 2 out of 3 company founders come from a technical background.

Founder Background	Number	Percentage
Technical	42	61%
Sales & Marketing	15	22%
Finance	6	9%
Other	6	9%
Total	**69**	**100%**

Table 1: Founder Background

Nearly half (49%) of the founders have a college degree, and a further 39% have either a post-graduate or doctorate qualification. In the Top 20 of companies (by current revenue), the proportion of founders with post-graduate degree or doctorate rises to 45%.

Profile of Participating Companies

The 69 companies included in this survey employ 2,745 employees, equating to an average of 40 employees per company. The largest company in the survey has 347 staff.

Company Age	Minimum	Average	Maximum	Median
1 – 3 years	1	10	23	9
4 – 5 years	5	29	80	24
6 – 10 years	7	37	135	23
11 – 24 years	9	85	347	48

Table 2: Employment by Company Age

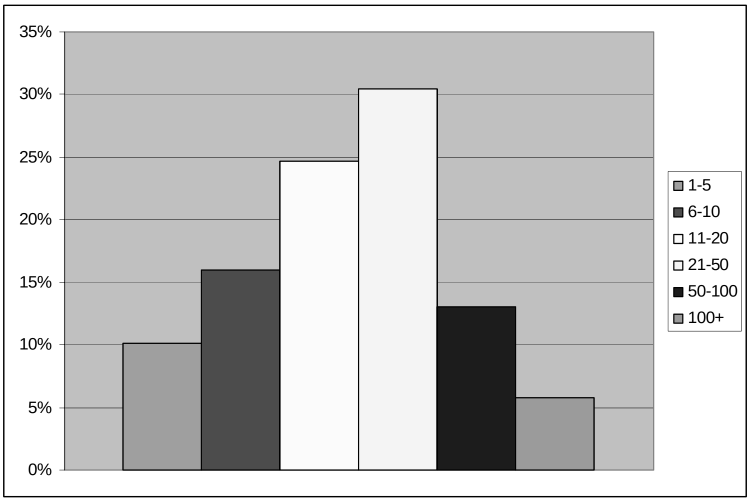

Figure 2: Distribution of Employment

The distribution of company size follows a normal bell curve distribution. Predictably, the concentration of employment lies in the Top 20 companies, which represent 70% of the employment figures.

Commentary

While it is unsurprising that the older companies have more employees, it is interesting to note that there are a few companies in each age bracket that employ significantly more than the norm for companies of their age. This explains the difference between the median and average value for each age group seen in **Table 2: Employment by Company Age**.

Survey Results 2: Revenue

Key Points

- **Most responding companies are small: 90% have revenues below €10 million; 50% have revenues below €2 million.**
- **Most companies are modest in their ambitions: only 2 expect to grow to revenue of €100+ million within the next 3 years, while of the 90% with current revenue below €10 million, only 48% expect to break the €10 million barrier in the same period.**
- **Revenue is concentrated in a few markets: Ireland, 39%; USA, 23%; UK, 20%.**
- **Most revenue is generated directly by the company; only 10% comes through partners.**

Revenue Performance

The majority of companies (90%) represented by this survey have revenues of less than €10 million, and half (35) have revenues of less than €2 million.

Annual Revenue	<€2m	€2m - €5m	€5m - €10m	€10m - €50m	€50m - €100m	€100m+
Today	35	14	13	6	1	0
In 3 years	2	16	14	31	4	2

Table 3: Company Revenues Today & Future

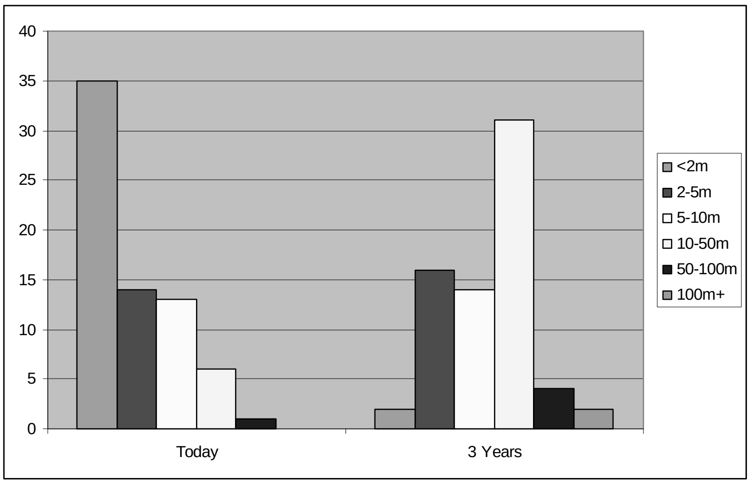

Figure 3: Company Revenues: - Today & Future

All the companies surveyed expected to see strong revenue growth in the next 3 years.

Geographical Source of Revenue

Examining the source of revenue, 39% of sales are generated today in the Irish market, followed by the United States at 23% and the United Kingdom at 20%. In general, companies have not yet made significant inroads into other markets.

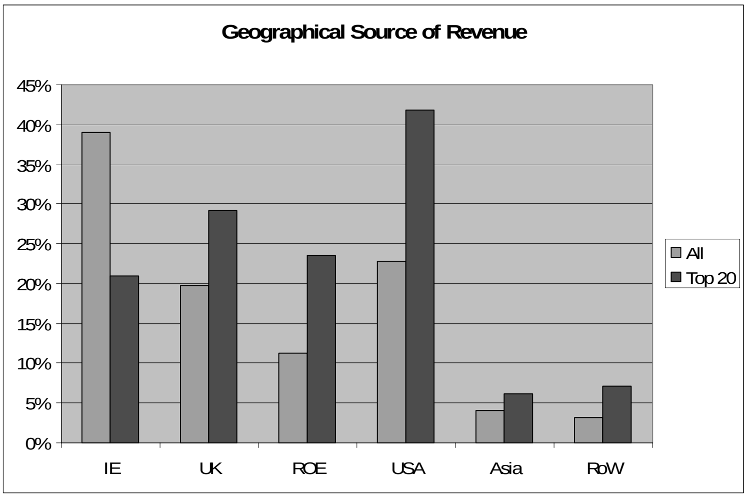

Figure 4: Company Revenues: Geographical Source

Export markets are more significant for the Top 20 companies, which gain more of their revenue, 42% on average, from the United States than from any other territory. For these companies, the United Kingdom is the second largest source of revenue (29%) and the Rest of Europe (ROE) is the next most important market (24%), in terms of revenue.

Selling through Partners

The percentage of revenue generated through partners by companies in this survey is 10%. Even the larger companies only achieve 12% of their sales from a third party channel.

In later answers to this survey, only one-third of respondents felt that they had adequate skill levels in their companies to sell through partner channels.

Commentary

The distribution of current revenues – 50% of companies with revenues below €2 million – is not particularly worrisome or noteworthy, in and of itself, as one would always expect there to be a number of new companies coming in at the bottom of the pyramid, starting new businesses and setting foundations to become the large companies of the future. However, of the 35 companies that have less than €2m in revenue, 14 of them are more than 5 years old, 7 of those in the €2-5m category are of a similar age, as are 9 of those in the €5-10m category.

Furthermore, given the normally optimistic nature of revenue projections, it is disappointing to see that nearly half of the companies do not expect to have broken the €10m barrier by 2008. This is an issue not only because of the need to achieve scale, to achieve internal efficiencies and momentum for growth, but also because there is a minimum threshold below which a company cannot obtain the requisite global reach and resources to compete internationally.

Things are not all bleak. In fact, there are a number of exciting companies in the sector whose leadership shows the requisite passion for growth, driven forward by a flair for entrepreneurial marketing, and whose companies are delivering world-class products. These companies exhibit all of the features that can form the cornerstone of our future indigenous sector.

Nonetheless, many companies appear not to have the ambition to be leading forces in their respective sectors. Their constrained ambition is, of course, no less valid an objective than global leadership but, if the indigenous software sector does not have its share of companies that at least have the aspiration to be significant participants in their sector, the sustainability of the sector's growth must be at risk.

An opportunity exists to assess the attributes of companies that have the desire and capacity to reach global standards in terms of product excellence, revenue levels and market presence, and to focus growth services behind those companies.

Selling through partners is one of the most significant issues facing the Irish software industry. Selling through a third party channel is poorly understood and is largely viewed as a tactical, rather than a strategic, activity. At worst, it is a reflection of weak product management, limited marketing capability and ineffective sales execution. Few companies in Ireland differentiate between direct sales models and partner sales models in the context of the efforts or approaches needed to succeed. Irrespective of the price or complexity of a company's offering, the role to be played by partners is always significant. True channel revenue acceleration – which is the primary rationale for entering into partnerships – usually happens only when both parties' strategic objectives and company orientations are aligned.

The percentage of revenue (10%) generated through partners by companies in this study is frighteningly low. Most large international software companies have a much greater proportion – typically more than 40% of their sales and marketing activity is executed on their behalf by channel partners – and it is one of the critical components that should be considered if a company has ambition to achieve market coverage sufficient to achieve a leading market position.

Survey Results 3: Challenges

Key Points

- **The key challenges faced by responding companies are: Revenue Growth (80%), Product Development (51%), Market Entry and Profitability (42%).**

Main Challenges in 2005

Revenue Growth continues to be the area that most companies see as the toughest area to conquer: 80% of companies highlight this as one of their main challenges for 2005.

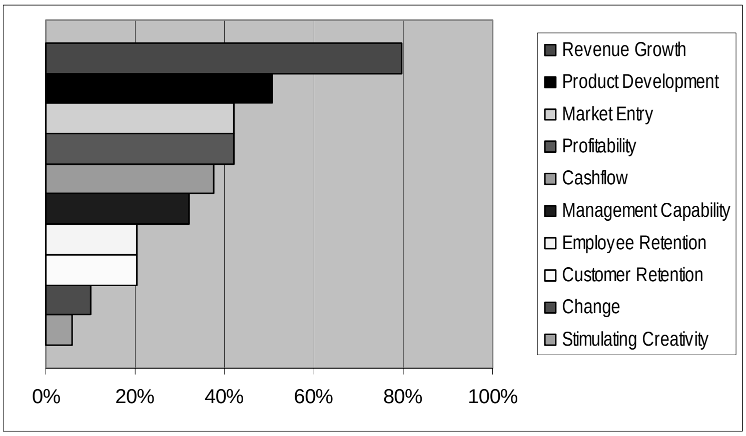

Figure 5: Key Challenges for 2005

The next most frequently selected challenge is Product Development: more than half of companies suggest that this is an area where they are having difficulty. For the Top 20 companies, this placing reduces to 2 in 5.

Key Challenges for 2005	All Companies	Top 20 Companies
Revenue Growth	80%	80%
Product Development	51%	40%
Profitability	42%	50%
Market Entry	42%	35%
Cashflow	38%	25%
Management Capability	32%	35%
Customer Retention	20%	10%
Employee Retention	20%	35%
Change	10%	10%
Stimulating Creativity	6%	0%

Table 4: Key Challenges for 2005

Profitability takes the second-place spot for the larger companies: half of them see it as a main challenge – probably reflecting their maturity and the pressure to generate a return on investment for the investment partners.

Across the respondent companies, Profitability takes an equal third position with Market Entry, the latter being relegated among the Top 20 companies to equal fourth with Employee Retention and Management Capability.

Commentary

This challenge presented by Revenue Growth is felt equally by both the larger and smaller companies – hardly surprising, given that nearly all the companies feel that they are lacking competence in sales and marketing.

But is it solely because the sales and marketing functions in the companies are just not up to it? Unlikely – Revenue Growth is perhaps more likely to be impacted by a poorly-selected market / product / market entry strategy combination. It is certainly affected by a lack of clarity in some companies on the key strategic imperatives driving the company. As shown later, of the 31 companies that selected Market Share or Maximising Profit as their key Business Strategy, 21 of them still selected Revenue Growth as a main challenge. Most (14) of the 18 companies that selected Market Share as their Business Strategy indicated Revenue Growth as a main challenge, 40% more than the 10 that selected Market Entry as a Business Strategy.

Interestingly, the next most frequently selected challenge is Product Development, where more than half the companies suggest they are having difficulty. It is not clear why Product Development is a problem. As reported later (**6: Management**), most companies are happy with the capability of their engineering function, and few (10%) companies overall are concerned about Employee Retention.

More importantly, perhaps we should question the ranking of Management Capability as only the sixth most frequently selected 'Main Challenge'. If the Sales, Marketing, Product Management and Partnering capabilities are as weak as indicated in the survey, where will Revenue Growth come from? It is a harsh and unavoidable truth that, unless the Management Capability issue is fixed, most companies will flounder, miss their numbers, and fail to realise their potential.

Survey Results 4: Strategy

Key Points

- **55% companies identified Revenue Growth as their strategic imperative for the year ahead.**
- **Companies focused on Revenue Growth or Market Share are more likely to be a leading player in their market.**
- **51% of companies selected Product Leadership as their Business Discipline.**

Business Strategy

One of the issues that challenges growing companies is to determine the single most important strategic imperative that should drive their business. When external investors are involved in a company, it is frequently hard to get consensus on such an important item, but unless clarity exists in this area, productivity suffers, as all stakeholders (executive leadership, employees and investors) are not aligned. While it is clear that a company needs to have a detailed strategic plan to execute on all of its core activities, selecting a primary Business Strategy should be one of the basic tenets upon which all other strategies are founded.

Business strategy is the key aim or goal of a company – at the highest level – and should be identified as 'the core reason for being' for the company at a given point in time. Maximising Profit, Revenue Growth or Market Share are the only three options available.

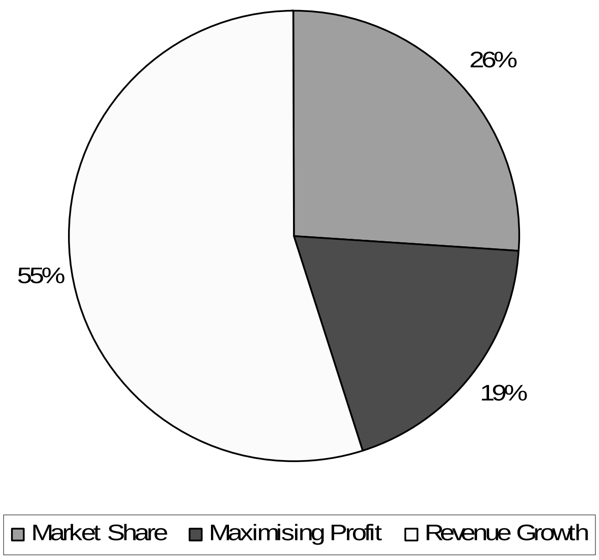

Figure 6: Business Strategy

The majority of companies (38) that responded to the survey selected Revenue Growth as their strategic imperative for 2005. This was followed by 18 companies looking to increase their Market Share, while Maximising Profit was the priority for the remaining 13 companies.

Among the Top 20 companies, there was a reduction in the percentage of those focused on Revenue Growth (40%), and a similar number (35%) that identified Market Share as their strategic imperative.

Business Discipline

Where Business Strategy is the 'what' companies do, Business Discipline is the 'how' they do it. Whether the focus is on Product Leadership, Operational Excellence or Customer Intimacy, successful companies tend to select and commit to one primary discipline matched to their market. Look at Apple, Ryanair, or Superquinn for successful companies outside the software industry that are relentless in their pursuit of Product Leadership, Operational Excellence or Customer Intimacy respectively.

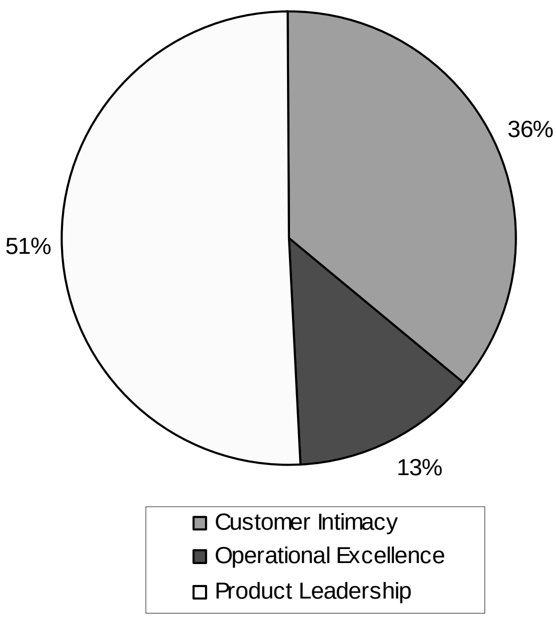

Figure 7: Business Discipline

The majority of companies (35) selected Product Leadership as their Business Discipline. This was followed by 25 companies looking to penetrate the market through a Customer Intimacy discipline. The remaining 9 companies selected Operational Excellence. Among the Top 20, Product Leadership remains the most common Business Discipline (55%), with Customer Intimacy second at 35%.

Commentary

Survey participants were asked to indicate at what level of revenue they believed the company would have achieved significant success. This is called the Significant Revenue Level (SRL). They were also asked what revenue level they thought their company had to achieve to be one of the top 3 companies in their chosen sector. This was called the Top3 Revenue Level (T3R). This data is, of course subjective, based purely on the judgement of the participant. But it is important to know what the companies' leaders think. It is vital to have a view of whether the leadership of our companies believe that they can be a significant player, if not one of the top 3 players in their sector. Armed with this perspective, we can derive insight and understand aspirations and motivations.

Analysis of the survey data was conducted to determine whether there was any correlation between the Business Strategy selected and the comparison between the SRL, T3R and the revenue that the company projected it would achieve in 2008.

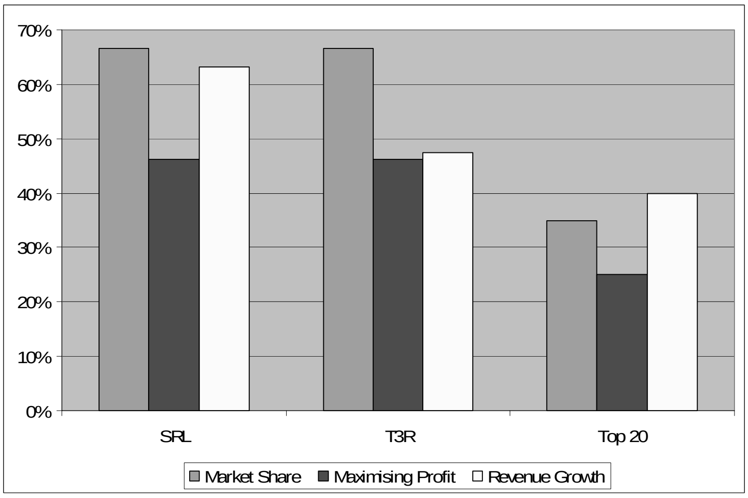

Figure 8: Business Strategy & Revenue Correlation

Figure 8 shows that companies focused on Revenue Growth or Market Share are more likely to be a leading player in their market. It is also more probable that they will attain the SRL and T3R targets, based on the revenue these companies projected for 2008. While this conclusion is based on speculative data, it is substantiated by the actual data, based on today's revenue, for the Top 20 companies in the survey.

As shown in **Figure 9**, it is the companies focused on Operational Excellence that most believe they will be forces to be reckoned with in their market sectors. Unfortunately, this is not substantiated by the Top 20 companies, more than half of whom are proponents of the Product Leadership mantra.

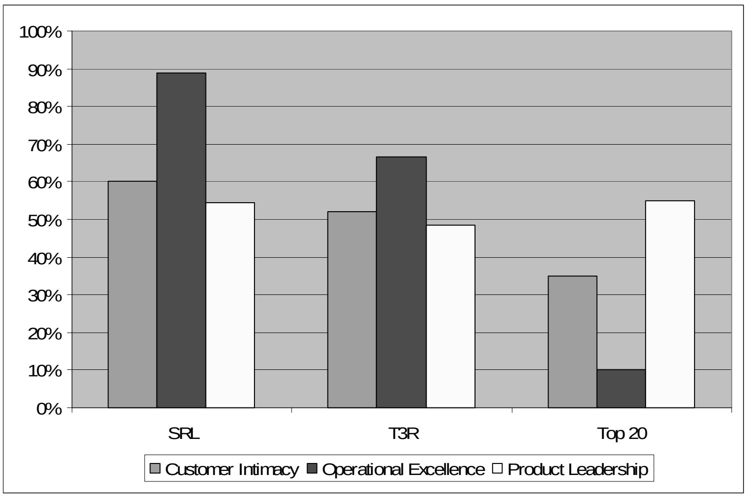

Figure 9: Business Discipline & Revenue Correlation

What follows is a broad generalisation, and probably invites disagreement. Service companies should be genetically programmed to follow Customer Intimacy as their Business Discipline and a Profit-focused Business Strategy. They cannot pursue Market Share as their primary strategy because delivery of service uses that most expensive of resources – human capital. Even when one considers outsourcing of services to low-cost providers, the orientation needs to remain firmly pointing towards a profit objective, and the customer needs to be ‘front-of-mind’ at all times.

Many companies are unclear as to their Business Strategy / Business Discipline mix, a symptom frequently observed in services companies masquerading as product companies. This presents a real barrier to growth.

Revenue Growth and Product Leadership are good bedfellows. Premium products can demand premium prices, though maintaining a leadership position in either of these is hard.

When Market Share is chosen, it should combine with Operational Excellence. **Table 5** shows how the respondent companies match up to these assumptions, although the industry’s general ‘Product Leadership’ bias, coupled with a small revenue base, skews the optimum mix.

	Market Share	Maximise Profit	Revenue Growth
Operational Excellence	**2**	1	6
Customer Intimacy	3	**7**	15
Product Leadership	13	5	**17**

Table 5: Intersection of Business Strategy & Business Discipline

Survey Results 5: Market

Key Points

- **84% of companies operate in Early Stage or Early Majority markets.**
- **With one exception, all the Top 20 companies are targeting markets with a potential value in excess of €100 million, with more than half targeting markets greater than €500 million.**
- **42% of companies (30% of the Top 20) do not have a documented go-to-market plan.**
- **Only 39% of companies represented here have conducted 'Extensive' or 'Exhaustive' market research.**
- **The average time for developing a product is 17 months.**

Profile of the Market

All markets comprise Embryonic, Early Stage, Early Majority, Late Majority and Laggards stages – usually distributed in a bell curve.

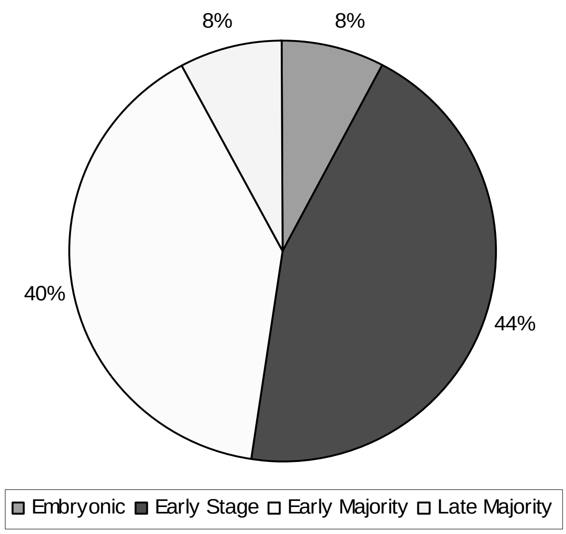

Figure 10: Market Stage

In the survey, most respondents (29) suggest that they operate in an Early Stage market. Of the 69 companies that responded, 4 either did not answer the question, or indicated that they did not know which stage applied to them. **Figure 10** relates to those companies who answered the question (65) by selecting one of the options provided. These 65 companies also are compared to the Top 20 companies in **Figure 11**.

None of the Top 20 companies are in an Embryonic Market, with the largest percentage in the Early Majority stage. In general, this reflects the age and maturity of the company as well as of the market, although many of the larger companies that are in an Early Stage market have targeted their products at specific emerging niches within an overall Early Majority maturing market.

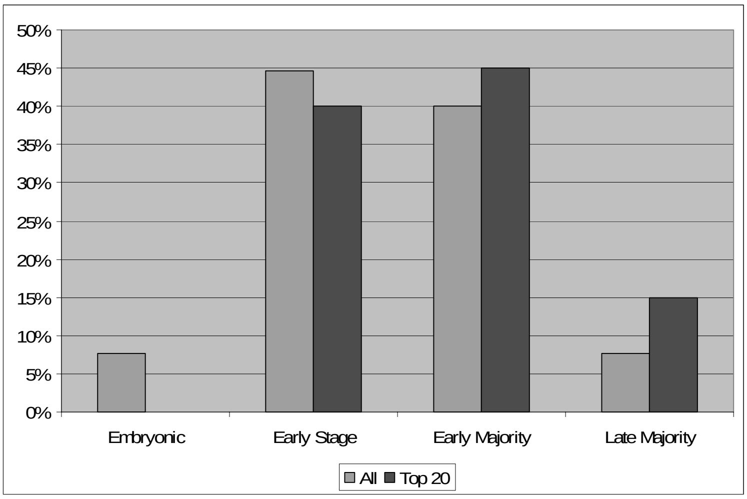

Figure 11: Market Stage – All Companies vs Top 20

Addressable Market

Except for one company (one of oldest companies in the survey, and focused almost exclusively on the Irish and UK markets), all the Top 20 companies are targeting markets that have a potential value in excess of €100 million, with more than half addressing markets that are greater than €500 million.

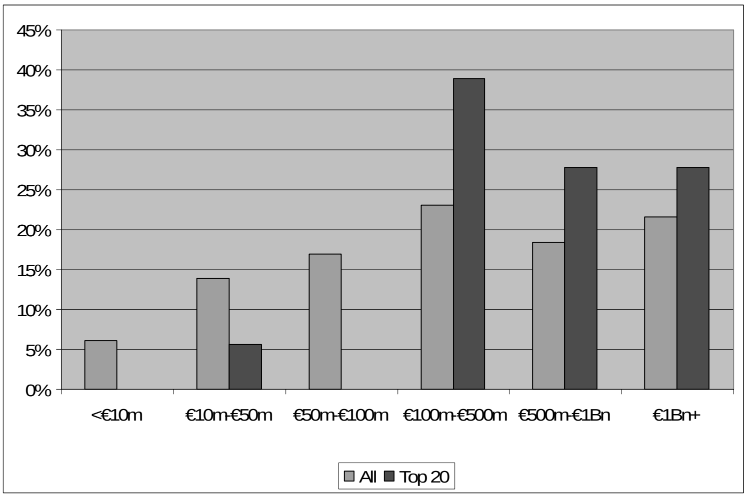

Figure 12: Addressable Market

Sizing the Market

The survey asked companies how (if) they went about the task of sizing their particular market opportunity. In 65 out of 69 cases, some activity had been undertaken. 29% of companies based their target market sizing exclusively on Industry Analyst's opinions. Using a 'Bottom-Up' sizing methodology was the preferred exclusive method of 26% of the participants, while the remaining companies (excluding the 4 who did not know their market size, or didn't answer the question) used a combination of 'Bottom-Up' sizing, 'Industry Analyst' input and web research.

Go-to-Market Plan

42% of the companies that participated do not have a documented go-to-market plan, even though more than 1 in 5 of these companies have selected Market Share as their primary Business Strategy. Even among the larger companies, 30% are missing this key plank in the company's strategic plan.

Bringing a Product to Market

The average time for developing a product seems to be about a year and a half. For all of the companies, the average was 17 months, rising slightly for the larger companies to 18 months.

Figuring out what to build, what market to address, how much market research to conduct and whether one should design for a vertical or horizontal market are all areas that companies need to consider, and the survey examined the different approaches, using the performance of the larger companies as a possible indicator of the most successful strategies.

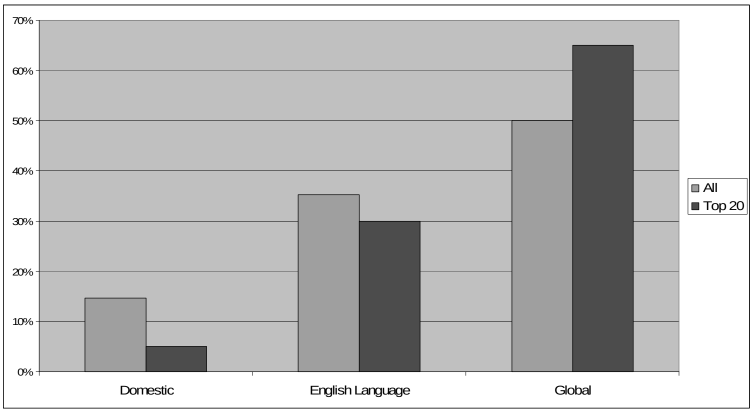

Figure 13: Geographical Considerations in Product Development

Half of the companies we examined say that they designed their products for the global market, with just 15% of companies designing for the domestic market (**Figure 13**). The domestic market figures are heavily weighted towards service-orientated (rather than product-orientated) companies. Among the larger companies, nearly two-thirds (65%) indicated that they have a global focus from the outset.

Nearly three-quarters of the Top 20 companies chose a specific business area (and one presumes a specific business problem to solve) as they began to develop their product. Just 13% of companies (15% in larger companies) stated that their sole reason for developing their product was in response to an individual customer. Sharing equal first place as the initial catalyst is a vision of the future, and a recognised gap in the market.

Impetus	All Reasons		Sole Reason	
	All	Top 20	All	Top 20
Individual customer requirement	30%	50%	13%	15%
Recognised un-met market need	54%	55%	25%	10%
Vision of future needs	54%	55%	25%	10%

Table 6: Impetus for Product Development

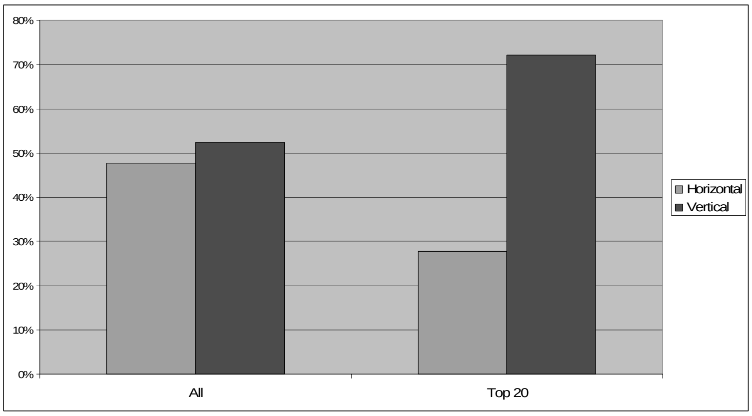

Figure 14: Impetus for Product Development

Only 39% of companies represented here have conducted 'Extensive' or 'Exhaustive' market research. The remaining companies only undertook 'Moderate' research or none at all.

Market Research	All Companies	Top 20
Exhaustive	2%	0%
Extensive	37%	47%
Moderate	55%	47%
None	6%	6%

Table 7: Extent of Market Research

Market Impact	All Companies	Top 20
Changes the ground rules	51%	47%
Competitive	49%	53%

Table 8: Market Impact of Product

Given that more than half of the companies suggest that their products 'change the ground rules' in the market, this is hardly adequate. This may be one of the reasons why respondent companies highlight Market Entry as one of their key challenges in 2005. The larger companies do better (47% carried out 'Extensive' market research), but there is still room for improvement.

However, the value that can be provided by talking to customers to assess their needs, in advance of market entry, can vary depending on the level of discontinuity a product introduces to a market. If the product concept is based on a unique vision of the future, the gap between the planned capabilities of the product and the business problem being grappled with by the customer today may be too large to render the conversation very useful. Nonetheless, irrespective of the nature of the product planned, a certain level of market research is essential.

Commentary

The perennial challenge for technology companies is to introduce a product in a growing market at a time when there are sufficient customers ready to adopt the technology, but not at a time either when there is an already established market leader, or when a disproportionate level of resources need to be expended in educating the market. Many companies succeed in getting a few early customers, but fail in delivering a product that is purchased by a significant percentage of the majority market.

When a company has identified the specific benefit that its product delivers to a particular profile of customer, the company leadership should next figure out whether there are enough of those types of customers, whom it can access, to make the target market worthwhile. In an ideal world, the company will have started with a vision of the market opportunity, though that is rarely the case. In either circumstance, the market opportunity needs to be adequate to provide a return on effort and investment.

By contrast to the larger companies, the overall spread of market size among the remaining 49 companies shows either a distinct lack of ambition, or a lack of understanding of the sector in which they are operating, with a full 25% of those companies targeting markets of less than €50 million. For a company to achieve double-digit revenues in such a market will require extraordinary market penetration.

Using market sizing data as a basis for business planning, if the data has been collected exclusively from analysts, will almost surely lead to erroneously-founded strategies. Rarely has an analyst the requisite detailed understanding of the particular niche in which a company might choose to participate. Nonetheless, there is tremendous value in leveraging analyst opinion to validate one's own market sizing activity, or to understand the issues that the analysts foresee as being critical in a sector. However, companies need to conduct, or commission, a detailed market sizing activity of their own, where they frame the questions, and listen to the answers.

One of the hardest decisions often for a young company to make is to design its product specifically for a vertical audience, when the entrepreneurial founders can often visualise ways in which many different segments of multiple market sectors could benefit from their exciting technology. Experience would suggest that a vertical orientation in the early stages reaps rewards much more quickly than a horizontal play. The data studied here supports that view.

The primary benefit of this approach is that the ability for a company to be come expert in the customer's business is dramatically increased if one is focused exclusively on that business domain. Selling to a bank today, a food company tomorrow and a phone company the day after makes it difficult to be come expert in any one area. Customers focus on business problems and the company needs to consider itself to be part of the banking, food or telecommunications industry, rather than be a technology provider to multiple sectors simultaneously.

Looking to the impetus for the initial development activity, the Irish software industry seems to have matured. Early leaders in the sector were typically application solution companies that grew out of an initial customer project, and then expanded to serve broader range of companies. Today's companies will more likely aim for a vision of future trends or recognition of unmet needs in the market.

Survey Results 6: Management

Key Points

- **Management capability in respondent companies is heavily skewed towards engineering.**
- **On the Management Capability Index, only the CEO (self-assessed) and Engineering scored above 50%.**
- **Drivers of Revenue Growth scored poorly on the MCI: Marketing, 16%; Sales, 14%; Partner Relationships, -9%.**
- **On average, 35% of respondent company revenue is dependent on the CEO personally.**

Management Capability

The survey questioned participants on the levels of competency within their companies across 8 areas, to establish whether the respondent believed there is an adequate skill level within the company in each of the areas. **Figure 15** shows the results, expressed as a Management Capability Index[1].

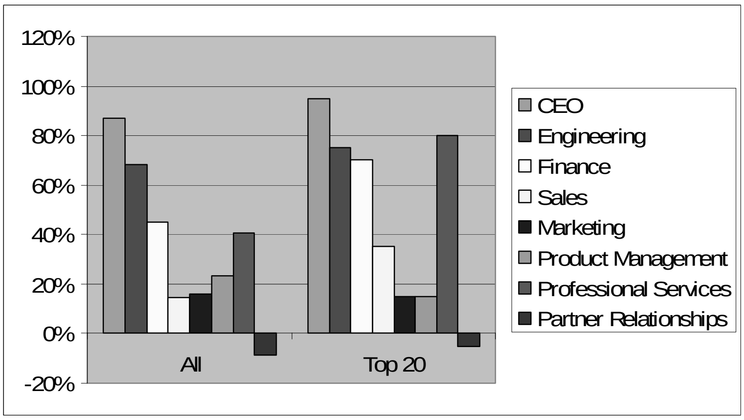

Figure 15: Management Capability Index

Most of the CEOs think that they themselves have the capacity to lead the company and, in general, the survey respondents are fairly happy with the performance of their engineering function. But, when all of the companies are assessed together, the results make fairly depressing reading once past the engineering function. Sales and Marketing are at the bottom of the pile, propped up only by Partnership Relationships which registered a negative score, both for this group and the Top 20 companies.

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[1] To ascertain the Management Capability Index (MCI), we attributed a value of +1 to 'Adequate', 0 to 'Unsure' and -1 to 'Inadequate' answers. In total, each competency area could score 69, the equivalent of an 'Adequate' answer (or a value of +1) for each of the companies represented. In **Figure 15**, the answers are shown as a percentage value (the aggregate of the answers for each company, divided by the number of participating companies).

Role	All Companies	Top 20 Companies
CEO	87%	95%
Engineering	68%	75%
Finance	45%	70%
Sales	14%	35%
Marketing	16%	15%
Product Management	23%	15%
Professional Services	41%	80%
Partner Relationships	-9%	-5%

Table 9: Management Capability Index

Despite the fact that two-thirds of the founders of the companies who responded to this survey come from a technical background, an average of 35% of all company revenue is dependent on the CEO (among the Top 20 companies, this falls to 14%), confirming that often the most successful salesperson in a small technology company is the CEO or founder.

Commentary

In the indigenous software sector in Ireland, we have too few experienced management teams – with depth and breadth – leading our companies. This survey sought to determine whether there is an awareness within the sector of the shortcomings and to see whether the extent of the skill deficit could be identified.

In this survey, an average of 35% of all company revenue is dependent on the CEO, falling to 14% for the Top 20 companies. The reason for such a high proportion of the revenue being CEO-generated is rarely because the CEO is a highly-skilled salesperson. It is more likely that, while the CEO has a deep understanding of the value his company delivers, he has failed to clearly articulate and document this value in terms that anyone else can explain and thus it is only his innate ability to contextualise the solution – while in conversation with the customer – that lets him succeed. As the other people involved in the sales process do not have the benefit of the CEO's inherent knowledge, then they will inevitably be less successful. CEOs should focus on instilling a structured sales process in their companies to reduce the dependency on individual performance. This is obviously a barrier to growth. There is a limit to the number of sales calls the CEO can (or should) make.

The result for Product Management among the smaller companies suggests a lack of understanding of the strategic nature of this function, particularly when juxtaposed with the Marketing scores. We suggest that the failure of

Marketing, and the weak score for Product Management (likely to be even worse in reality) conspire to render sales efforts less effective than they might otherwise be. This is an issue not be ignored.

As companies begin to emerge from the incubation stage, or ideally even before they write their first line of code, the promoters need to come to terms with the issues of sales and marketing, and understand that the operational and management expertise required to deliver, grow and continually reinvent a professional business (one that is capable of performing repeatedly on a world stage) is significant. Many company owners become nervous when they think about growth and are fearful of the changes necessary to fuel that growth. But big thinkers have a high tolerance for calculated risk. Ambition helps them move past those limiting fears, setting clearly defined goals that fit their vision, and adopting aggressive strategies - such as mergers or acquisitions, for example - to accelerate the process of making the dream a reality.

An entrepreneur with a vision who manages to get through the pains of start-up and become a major force in a specific industry is rare. Growing a business is tough. Many companies don't survive, let alone become industry leaders. Success stories are generally written by a team of people with complementary talents. It requires superhuman abilities for one individual to understand all of the requirements for company management, product delivery, and organisational and infrastructural development. For software companies the required skills list is long. It encompasses strategic product management, innovation in product design and market entry, operational and financial skills, leadership and team development capability, competence in strategic positioning, and sales and marketing, as well as specific skills such as strategic plan development, partner and channel negotiations, core asset development and protection, company infrastructure design, and lots of hard work!

Most of the world's great technology companies are led by visionaries who have partnered with experienced management talent to help them fulfil their dreams. If this was the movie industry, 'best supporting actor' awards would go to Eric Schmidt (Google), Kevin Rollins (Dell), Jim Clark (Netscape), or Jim Basillie (RIM – Blackberry). While the founders – Page & Brin, Dell, Andreesen, and Lazaridis – are better-known, without their business partners they might not be known at all!

Companies must acquire or create a cohesive management team of experienced professional managers who together can provide the leadership, strategic and operational ingredients necessary to construct a world-class company. Where necessary, CEOs need to park their egos, and recognise that it is in their own self-interest to understand what they are good at and lead with their natural abilities and talents, and follow where appropriate in the areas in which they are weak.

Together as an industry, we must help those companies that have large ambition, by working with the other stakeholders to devise strategies and initiatives to bridge the business management skills gap, which is a certain retardant to growth.

Survey Results 7: Investment

Key Points

- **4 out of 5 companies have received investment from one or multiple sources: Enterprise Ireland, 54%; VCs, 49%.**
- **Nearly half the companies have received investment of less than €2 million.**
- **In all but one case, companies that have achieved revenue of more than €10 million, each have received investment of more than €10 million.**
- **In 11 companies (16%), the respondents felt that the investors' views were only partly in synch with theirs.**
- **Most respondents wanted to see an exit in less than 5 years, with 34% planning an exit in less than 3 years.**

Investment Issues

In 2004, there were approximately 35 investments made in Irish software companies. Of these the majority were in the €1 – €5 million range. Only a handful of investments were more than €10m.

The figures for the first quarter of 2005 are more encouraging. Some of the most promising companies have attracted substantial equity investments, bringing the total invested for the quarter (by the professional venture capitalists) to approximately €75 million, including 4 very significant investments of between €7 and €20 million.

Source of Funds

4 out of 5 companies have received investment from one or multiple sources.

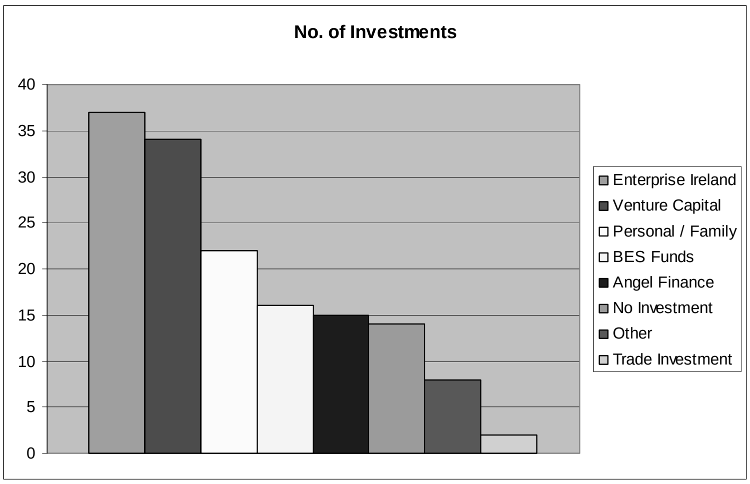

Figure 16: Sources of Investment

Unsurprisingly, Enterprise Ireland (EI) is the source of funds mentioned more frequently than any other among the companies surveyed. The State agency has invested in more than half (54%) of these businesses.

EI is followed fairly closely by the Venture Capital community as the next most frequent investors. VCs have invested in nearly half (49%) of the companies. Other sources of finance are less common and also less successful. Among the Top 20 companies, EI has played a role in 65% of cases, with VCs involved in 12 of these top performers.

The amounts invested are typically small: 33 of the companies (nearly half) have received investment of less than €2 million.

Living with the Money

The survey tested the views of the respondents as to whether they felt that the interests of the investors were aligned with those of the founders. The investors in 12 of these companies should worry, as it seems that interests are beginning to diverge. In these 12 companies, the survey respondents felt that either the investors' views were only partly in synch with theirs or (in one case) not at all on the same page. Only one of these companies felt that its financial backer was 'Very Helpful'. The other answer options for this question were 'Neutral' (5) and 'Somewhat Helpful' (6).

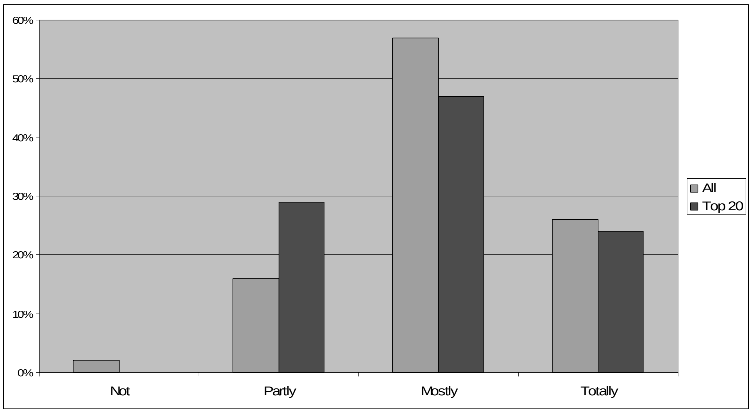

Figure 17: Alignment of Interests

Two-thirds of these 12 companies felt that its board's contribution was 'Neutral' or worse (see **8: The Board**). In contrast, the majority of companies seem to have a harmonious board room, with investors and promoters working side-by-side, meeting the challenges of the company together.

Exit Aspirations

We asked the survey participants about their desire to achieve an exit from the business. Unfortunately, we did not get a representative sample of answers to this survey from the investment community, so it is not possible to assess their aspirations in term of value realisation for their investments.

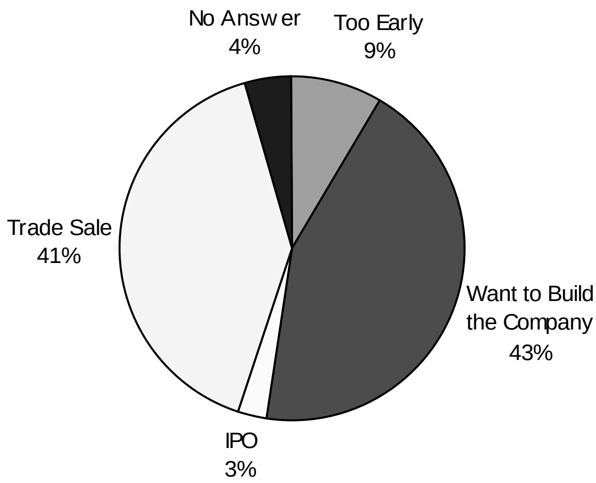

Figure 18: Exit Aspirations

While most respondents argued that it was 'Too Early' to consider an exit, or that they wanted to 'Build the Company', 41% suggested a 'Trade Sale' as their exit mechanism. Of those 28 companies, only 12 expect to have revenue of €10 million or greater in 3 years' time. 7 companies expect to be in the €2m – €5m range and, of these 7 companies, 6 expect to require further funding between €500k and €5 million. It is not clear where the value is expected to be that will entice a trade acquisition for these 6 companies.

Notwithstanding the fact that more than half of the survey respondents did not indicate their desire to exit either by a Trade Sale or IPO, nearly all (90%) have a timeframe for exit. The bulk of participants indicated that they would like to see an exit in less than 5 years, with slightly more than one third (34%) planning a faster exit – in less than 3 years.

Commentary

One of the challenges facing Irish software companies is the size of the domestic market. With very few exceptions, companies need to enter export markets at a relatively early stage in their development. Large Irish-based corporations (with local decision-making) are few and the proportion of Government IT spending that finds its way to SMEs (Irish or otherwise) is unfortunately very small.

Government procurement should set aside 5% of its budget for purchases for EU SMEs. If companies in the Irish software sector get their share of this opportunity, it will serve to provide those urgently needed 'first customer reference sites' that is one of the barriers to attracting significant investment. And, it will effectively provide State endorsement of the product when initial international marketing efforts begin.

Young companies need to develop expertise in international markets at the same time as they build their in-house R&D capability and seek to establish their first reference clients. They need to attract world-class talent to help grow their companies. They compete in foreign markets with domestic players who are typically better funded and more attuned to the demands of the market in which they were founded. And Irish companies attempt to do all of this from a remote location.

If the investee company's appetite is not sufficiently ambitious, or the proposition is not attractive, or the management team is weak, then large (or any) investment is not merited. However, we would suggest that to make significant inroads into (for example) the US market, in a significant sector, requires a minimum initial investment of €5m and a likely lifetime investment of €10m - €20m (though it is hard to generalise). Without such resources, it is almost inevitable that a company will either fail, or achieve moderate success, and be acquired by a larger player and become relegated to a supporting role.

The venture capital community should set the bar high and invest infrequently, but in large amounts. Enterprise Ireland has a very important role to pay in early stage funding, as does 'angel finance'. The natural consequence of a tax regime in which there is equivalence between the tax treatment of capital gains from high-risk start-ups – perhaps the most important element of our future economy – and the tax treatment of gains from relatively secure property is that there is little incentive to fund the bright new ideas that might propel Ireland forward over the next 10 years.

We need more 'angel finance' available in the seed capital and early stage investment windows, to provide the venture capital community with a wider selection of propositions, from which they could choose a small number for large investments. In the US, 'entrepreneurs turned investors' invest over 20 times more than venture capitalists in high risk ventures (Source: US Small Business Administration).

The fact that nearly half of the companies surveyed have received investment of less than €2 million could be explained by first round investments in young companies, but for the fact that only 9 of the 35 oldest companies have received financial investment of greater than €2m. It is hard to find a significant percentage of technology companies anywhere in the world that have made their mark in any particular sector with such meagre funding. All stakeholders should consider whether such investment is wasteful, and contemplate the potentially greater returns from an investment strategy that would see fewer investments of greater magnitude.

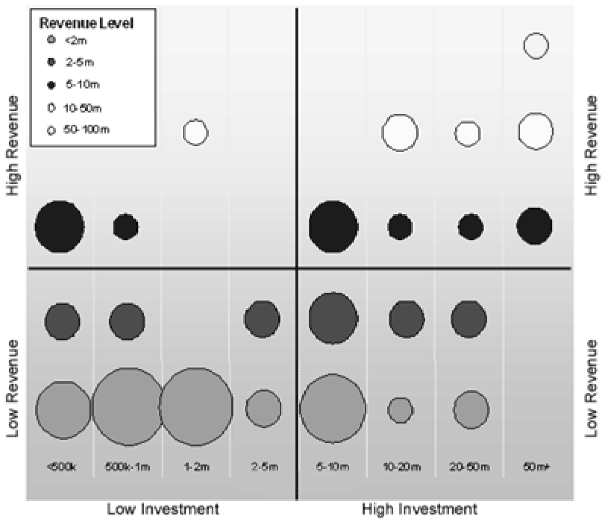

Figure 19: Investment & Revenue Correlation

It may be useful to examine **Figure 19**. In all but one case, companies that have achieved revenue levels of greater than €10 million, each have received investment of more than €10 million. In **Figure 19**, the size of the bubble indicates the relative number of companies at the intersection of a Revenue Level and an Investment Level.

Investment Received	<€500k	€500k to €1m	€1m to €2m	€2m to €5m	€5m to €10m	€10m to €20m	€20 to €50m	€50m+
No. Companies	11	12	10	4	15	6	6	5

Table 10: Investment Received

It is interesting to note that, where investor and management interests were seen to be out of alignment (**Figure 17**), only 25% of the companies expect to achieve significant revenue levels (in the context of their market sector) in the next 3 years. It's no wonder there is a tension around their board tables.

The fact that only 2 companies see an IPO on the horizon is a little disappointing. In addition, there is only one company which has indicated that it does not have any desire to exit, and shows the potential to be a significant force in its market. One company that answered the survey has already achieved a stock market flotation.

Survey Results 8: The Board

Key Points

- **The boards of respondent companies average 5 members per company.**
- **In total, the boards comprise 338 people: 154 members of the management teams (46%), 101 investor representatives (30%) and 83 non-executive directors (24%).**
- **Two-thirds of respondents felt that their board played a "Significant" or "Critical" role in their business**

The Role of the Board of Directors

The survey examined the makeup of the Boards of Directors of the participating companies. We questioned the perceived effectiveness of their participation and tested for the alignment between the Board and the promoters of the business.

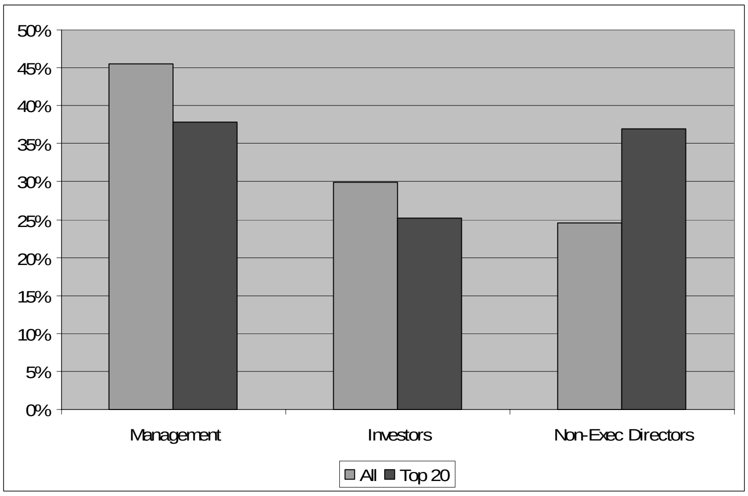

Figure 20: Board Composition

The boards of the companies represented by the participants in this survey comprise 338 people: 154 members of the management teams, 101 investor representatives and 83 non-executive directors, with an average of just less than 5 board members per company (**Figure 20**). Only in 46% of cases are the management outnumbered on the board by the combined number of investor representatives and non-executive directors. In respect of the Top 20 companies, this percentage rises to 60%.

The management participation as a percentage of the total number at the board table is 46% on average across all the companies. In the case of the Top 20 companies, this drops to 38%. The involvement of non-executives is clearly higher up the agenda for the larger companies, with 37% of all board members of these companies coming from this source. This compares with just 25% for all of the companies surveyed.

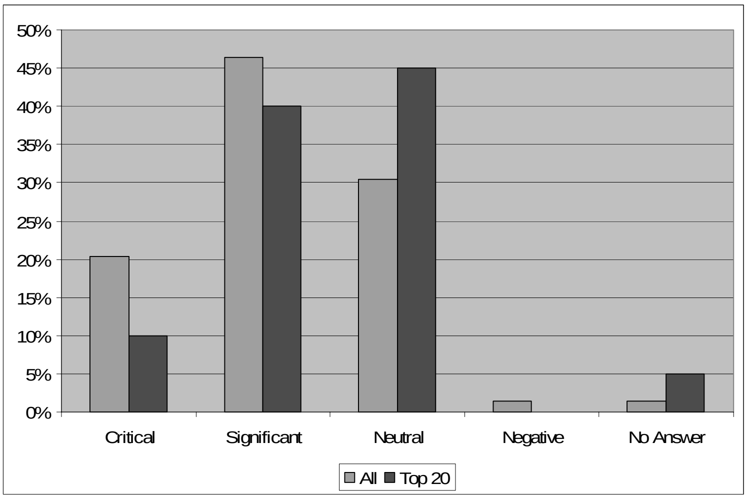

Figure 21: Board Contribution

The contribution of the boards of the companies that participated in the survey is generally viewed fairly positively. Two-thirds of respondents felt that their board played with a 'Significant' or 'Critical' role in their business. The findings are slightly less positive for the larger companies, with just half of these companies sharing the same views.

Commentary

The task of building an effective Board for a developing high technology company is both important and daunting.

An effective Board can be invaluable to the CEO and his/her team. Great Boards add real value and provide experience-based advice and practical assistance to the CEO. They help attract funding, facilitate important business introductions, attract key new hires and assist the CEO in navigating the inevitably choppy waters faced in building a fast-growing business. Many non-executive directors will have experience of other successful business and each should have different skills to bring that complement those of the CEO and the management team.

However, the draconian compliance legislation visited upon us in a post-Enron world makes the job of attracting non-executive officers increasingly difficult. In the context of an Irish software sector, we might be missing an opportunity to leverage the expertise and significant goodwill and willingness to help that is available in the country.

CEOs often make the mistake of having too many of the executive management team on the Board – they comprise 46% of Boards in respondent companies. This generally lessens the effectiveness of the Board and can turn Board meetings into management meetings. It also makes the Board position less attractive for the non-executive director who can bring experience, objectivity and an emotional detachment that can help align key executive selection, management and evaluation with the company's goals.

The challenge for the Irish indigenous software sector is two-fold. Young companies can benefit tremendously from the participation at Board and strategic level of more experienced business professionals, and they should be made more aware of this. Second, the compliance and corporate governance liabilities that attach to non-executive participation in smaller companies should be relaxed lest they continue to act as a deterrent to involvement.

Survey Results 9: Innovation

Key Points

- **65% of companies believe that they have substantial innovation built into their products.**
- **77% develop products totally in-house.**
- **65% believe they have sufficient domain expertise in-house to develop products to customer requirements, while 28% use customer expertise in development.**

Level of Innovation

It is generally accepted that the level of innovation in Irish software is very significant. Most (75%) of the Top 20 believe that they have 'Substantial' or 'Extreme' innovation built into their products – **Figure 22**. Nonetheless, across the 69 companies, the innovation level tails off a little, with only two-thirds of the total sample registering innovation levels in the two higher categories.

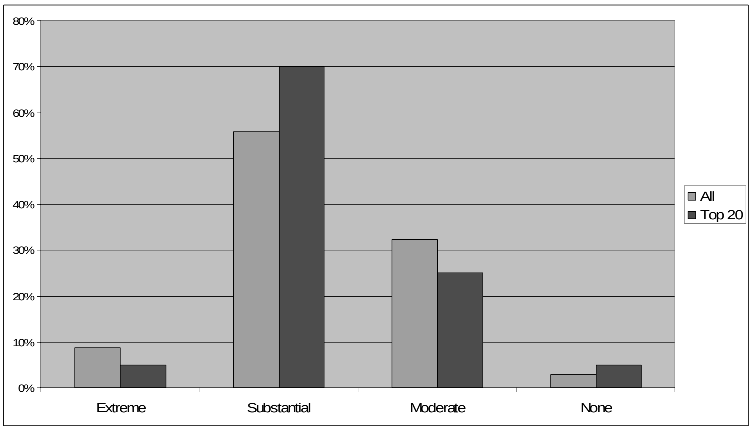

Figure 22: Level of Innovation

External Help

Even though survey respondents indicated that Product Development was their second greatest challenge (after Revenue Growth) (**Table 4**), they appear not to look outside for help. Thus, opportunities may exist for greater co-operation and shared Intellectual Property development. There may be merit in recognising that the speed at which today's markets move require shorter development times than the 18 months that appears to be the norm. This may be facilitated by cooperative development, licensing of technology, or external help.

Source of Help	All Companies	Top 20 Companies
All in-house	77%	82%
All out-sourced	3%	0%
Coding all / part out-sourced	11%	6%
External support for architecture design	9%	12%

Table 11: Extent of External Help

While 30% of companies included 'Individual customer requirement' as an impetus for product development (see **Table 6**), 28% said that they used customer expertise to support their market domain expertise. The fact that nearly two-thirds of companies (65%) felt that they had all of the required domain expertise in-house is noteworthy.

Source of Expertise	All Companies	Top 20 Companies
Domain expertise in-house	65%	59%
External consultant used	8%	6%
Customer expertise used	28%	35%

Table 12: Source of Expertise for Product Development

Commentary

Experience suggests that companies may need to expand their definition of domain expertise to include not just what features the product needs, or how to build the product, but to consider how the customer wants to buy the product and what supporting services or partners are needed to provide 'whole product' solutions to the customer.

At the heart of innovation is a sequence of activities that turns ideas and concepts into reality. Innovation, in the context of this report, is anything that has the potential to bring about a dramatic increase in the scale or size of the organisation. For too long, has innovation has been viewed as a mystical black box art – R & D – from which the very occasional new product emerges. The innovation processes in our software companies need to have a broader framework that actively encourages and rewards new products, new ways of serving customers, new delivery processes, new channels and business models.

While we have some great examples of innovation in the software sector (the first SMS message was sent in Ireland), the innovation process is in need of radical overhaul. On the surface, there are many components in the Irish software cluster that should give rise to high levels of innovation (high presence of leading IT multinationals, good funding available through Science Foundation Ireland, vastly-improved funding in the third-level sector for research). However, the reality consists of silos of unrealised innovation, which does not come to fruition due to a lack of awareness and co-operation.

Early stage customers are a huge source of helping to bring new innovations to the market. However, with the exception of a limited few, leading organisations and companies in Ireland are not disposed to working with small innovative software companies. The ISA has lobbied Government on increasing the share of procurement it spends with SMEs across the EU. This lobby needs to be extended, and further explanation given of the need for small Irish technology companies to establish ‘early reference site’ customers. These early innovator customers may well be the catalyst to scale for many of our companies, providing them with the credibility they need to make initial international sales.

The European Innovation Scoreboard 2004 confirms that the innovation gap between the EU and the US has not reduced since the adoption of the Lisbon agenda. The US leads Europe in 9 out of the 11 indicators used to compare innovation. More worryingly, Ireland is among a group of countries that are ‘losing momentum’ (Source: http://trendchart.cordis.lu/scoreboards/scoreboard2004/index.cfm)

Thus, we need to address innovation as a matter of urgency. Much of the research being carried out in our colleges is never examined for its commercialisation potential. Industry complains about inflexible practices and unrealistic expectations on the part of the third-level institutions, while their representatives allege miserliness on the part of their would-be commercial partners.

Models, such as that in place at Stanford, work well in other jurisdictions. The ISA, ICT, Higher Education Authority, Enterprise Ireland, Science Foundation Ireland and Forfás should liaise to form a National Directorate on Software Innovation, whose mission is to encourage and assist Irish SMEs in bringing radical new innovations to market. The Directorate should be given significant powers to influence State funding to both universities and SMEs.

Appendix A: Survey Questionnaire

No.	Question	Answer Options
1	Please select which role best describes the role you play in the company as an executive, advisor or investor. (If you are completing this survey as a VC or Advisor, please select one of the companies in your portfolio and complete the survey with reference to that company.)	Chief Executive Chief Finance Officer Chief Operations Officer Chief Technology Officer Investor Representative Non-Executive Director Other Executive
2	How old is the company? (Years)	
3	What is the number of full-time employees in the company?	
4	What is the company's current annual revenue level?	<€2m €2m-€5m €5m-€10m €10m-€50m €50m-€100m €100m+
5	What % of the company's revenue comes from Ireland, UK, Rest of Europe, USA, Asia, RoW?	
6	What % of revenue comes from partners?	
7	What is the expected revenue level in 3 years?	<€2m €2m-€5m €5m-€10m €10m-€50m €50m-€100m €100m+ Don't Know
8	What % of the company's revenue in 3 years is expected from Ireland, UK, Rest of Europe, USA, Asia, RoW	
9	What % of revenue do you expect to come from partners in 3 years?	
10	At what level of revenue do you believe the company will have achieved significant success?	<€2m €2m-€5m €5m-€10m €10m-€50m €50m-€100m €100m+ Don't Know
11	Is there an exit strategy for the business?	No - Too early No – Would like to build the business Yes – stock market flotation Yes – trade sale
12	What level of annual revenue do you think the company has to achieve to be one of the top 3 companies in your chosen sector?	<€2m €2m-€5m €5m-€10m €10m-€50m €50m-€100m €100m+ Don't Know
13	What is most important to the company in 2005?	Market Share Profit Revenue Don't Know
14	Which of the following is the company's primary business discipline?	Customer Intimacy Operational Excellence Product Leadership Don't Know

No.	Question	Answer Options
15	When would you expect to see some value realisation or exit from the business?	< 1 year 1-3 years 3-5 years 5+ years As soon as possible No desire to exit
16	What is your greatest challenge in 2005? (select and rank 1,2,3)	Ability to change Cashflow management Customer Retention Employee Retention Management capability Market Entry Product Development Profitability Revenue Growth Stimulating creativity
17	Have you received external investment? (Tick all that apply)	Angel Finance BES Capital Enterprise Ireland No External Investment Other Investment Personal/Family/Friends Trade Partner Investment Venture Capital
18	At what stage in the company's development was external capital raised? (Tick all that apply)	Start-up/Seed/Concept Stage Pre Revenue Early - First Customers Not Applicable Development Growth / Expansion
19	What is the total level of investment you have received to date?	< €500k €500k - €1m €1m - €2m €2m - €5m €5m - €10m €10m - €20m €20m - €50m €50m+
20	Apart from funding received, how would you describe the contribution to the company by its investors?	Negative Neutral Somewhat Helpful Very Helpful
21	What is the total level of additional investment you think you will need to achieve your 3 year expected revenue?	< €500k €500k - €1m €1m - €2m €2m - €5m €5m - €10m €10m - €20m €20m - €50m €50m+
22	What is the make-up of the company's board?	Management Investors Other Non-Executives
23	Do you believe the objectives of the company's management and investors are aligned?	Not at all Partly Mostly Totally Don't Know
24	How do you perceive the board's contribution to growing the company?	Negative Neutral Significant Critical

No.	Question	Answer Options
25	What is the primary background of the company founder(s)?	Finance Sales & Marketing Technical Other
26	What is the education level of the founder(s)? If there is more than one founder, please answer this question in respect of that founder currently in the most senior executive capacity in the company.	Doctorate Graduate Post Graduate Undergraduate Other
27	What position in the company is currently occupied by the company's founder(s)? (Tick all that apply)	CEO CFO Chairman CMO COO CTO No longer with the company Other Exec
28	What level of competence or experience is represented on the management team in each of these areas to bring the company to the 3 year revenue objective stated above? CEO Engineering Finance Sales Marketing Product Management Professional Services Partner/Channel Development	Adequate Inadequate None Unsure
29	What level of experience does each of the management team have? CEO Engineering Finance Sales Marketing Product Management Professional Services Partner/Channel Development	<5 yrs similar market <5yrs experience 5yr+ different market 5yr+ similar market
31	What percentage of the company's sales revenue is generated primarily by, or is dependent on, the company's CEO?	
33	From the market's perspective, how would you describe the impact of the product?	Changes the ground rules Competitive
33	What was the initial impetus to develop the product? (Tick all that apply)	Individual customer requirement Recognised unmet market need Vision of future needs
34	What is the addressable market size for the product/service you are offering?	<€10m €10m-€50m €50m-€100m €100m-€500m €500m-€1Bn €1Bn+
35	How did you arrive at the addressable market size? (Tick all that apply)	Bottom Up Calculation Don't Know Industry Analysts Web Search
36	At what stage of development is your target market?	Early Majority Early Stage Embryonic Late Majority Don't Know

No.	Question	Answer Options
37	What geographic market was the product initially designed for?	Domestic English Language Territories Global
38	Was the product initially designed for a vertical or horizontal market?	Horizontal Vertical
39	What level of innovative technology has the company created in the product/service offered?	Extreme Substantial Moderate None
40	Do you have a detailed documented go-to-market plan?	Yes No
41	What length of time did you allow for market trials/beta programs?	0 <3 months 3-6 months 6-12 months 12+ months
42	What level of market research was conducted at product design stage?	Exhaustive Extensive Moderate None
43	Development time for your first product, from start to first release? (mths)	
44	What level of market domain expertise was available to company during product design?	Domain expertise in-house External consultant used Used customer expertise
45	Was software design and development all conducted by the company?	All in-house All out-sourced Coding all/part outsourced External support for architecture design

Appendix B: Participating Companies

The following is a partial list of the companies who contributed to the study. Some companies have asked not to be listed. We are extremely grateful to all for the time and effort expended in their participation.

- 3Touch
- Aircraft Management Technologies
- Allfinanz
- Assurelink Ltd
- Bard na Gleann
- Business Cape
- CAPE Technologies Ltd
- careWorks Limited
- Celerity Systems
- Changing Worlds
- Comit Ireland
- Computer Control Solutions
- Datacare Software Group Ltd
- DeCare Systems Ireland (Ltd)
- Delphi Technologies
- Documation
- e-gate Ltd
- EPC
- Fineos
- Grapevine Solutions Ltd
- Information Mosaic
- International Test Technologies
- Iona Technologies
- Irish Medical Systems Ltd
- Mapflow Ltd.
- Margate
- MDS Gateways
- Merit Software
- Microsol
- Mobile Aware
- Netsure Telecom Ltd
- Newbay
- Norkom Technologies Ltd
- Novara
- Ocuco
- OFM Solutions
- Openet Telecom
- Openjaw Technologies
- OpenMIND Networks Limited
- Orbism
- Performix Technologies
- Phoenix Technology Group Ltd
- PixAlert
- Prime Carrier Ltd
- Product Inform
- Product Innovator
- Prose-Progressive Systems
- PXIT
- Redkite
- Sentrio Technologies Ltd
- Shenick Software
- Silicon & Software Systems
- Similarity Systems
- Storm Technology
- Systems Solutions
- The Ganley Group
- Travel Innovation
- Two-Ten Health Ltd
- Valista
- Virtual Access
- Vulcan
- Waterford Technologies
- WestGlobal Limited
- Zarion