Feasibility Study: A Pan-European Market for Technology Growth Companies

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Introduction

This report contains the findings of an extensive feasibility study conducted over the course of eight weeks during the summer of 2004. The goal of the study, which was commissioned by Easdaq S.A., was to analyze the need and market conditions for creating a pan-European stock market for technology growth companies. The study was conducted specifically to collect data in support of each of the following objectives:

1. Identify and analyze the factors that led to the creation (and initial success) of the growth markets that emerged in Europe in the mid 90s, including: Easdaq (Nasdaq Europe), AIM, Neuer Markt, Nouveau Marché, and EuroNM
2. Identify and analyze the factors that led to the downfall of these markets;
3. Investigate and analyze the current need and market conditions for the creation of a pan-European market dedicated to technology growth companies;
4. Identify the key attributes and modus operandi for such a market.

To collect data, approximately 80 interviews were conducted with leading executives from across Europe in a broad range of industries. Most of the interviews were conducted in person and were conversational in nature, rather than questionnaire-based. Respondents included executives and board members of past and present exchanges, executives from the venture capital and private equity communities, investment bankers, fund managers, and executives from various other industry and governmental organizations. Detailed notes were recorded for each interview, which lasted on average about 50 minutes. Data from the interviews was augmented with extensive literature research via the internet, trade publications, news papers, other reports, and trade conferences.

As the study progressed, a central theme surfaced: all of the 80+ executives who were interviewed were in agreement that Europe underperforms in producing globally competitive technology companies. Consequently, the purview of the study was expanded to include an in-depth analysis of this issue, and how it relates to the need for a dedicated market for tech growth companies. The following report analyzes the key factors contributing to Europe’s underperformance in technology. Subsequently, the report presents an analysis of what led to the rise and fall of the mid-90s growth exchanges, the current need for a dedicated tech growth market, what the ideal pan-European growth market should look like, feasible options for creating one, and recommendations for moving forward. It is the author’s sincere hope that this report will serve as a focal point for a renewed effort to improve Europe’s ability to produce globally competitive technology companies, and the investment community’s ability to profit from them.
Executive Summary

The summer break between the first and final years at MIT’s Sloan School of Management is a risk-free opportunity for MBA students to learn about a new industry. As a former software entrepreneur from Atlanta, my 2004 summer in Europe proved to be far more exciting and eye-opening than I ever could have imagined. During June and July, I conducted a feasibility study for creating a pan-European market for technology growth companies. Contracted by Dr. Jos Peeters, Chairman and founder of Easdaq S.A., I was recruited from MIT to shed an unbiased light on the need and conditions for creating such a market.

Having recently re-purchased the controlling share in Easdaq (formerly Nasdaq Europe, and Easdaq before that) Dr. Peeters was looking for answers to a few key questions: What led to the rise and fall of the mid-90’s technology markets? Is there currently a need for such a market? If so, what would such a market look like? Is such a market feasible? In the search for answers I interviewed more than 80 leading executives from all across Europe in a wide range of industries. Most of the hour-long interviews were conducted in person, summarized in detailed notes, and supplemented with extensive literature research.

At the start of the project, the objectives seemed clear enough: determine if Europe needs a dedicated tech market, and, if so, what it should look like. As the study progressed however, a central theme emerged. All the respondents seemed to agree on one—and only one—issue: Europe underperforms in producing globally-competitive technology companies. Despite unanimity on the existence of this problem, opinions on the cause and solution couldn’t be more diverse. Consequently, the scope of the study was expanded to include a detailed analysis of Europe’s underperformance in technology.

Emergence of the 90s Growth Markets

During the early 90s, a successful effort led by the VC and PE communities, and supported by the European Private Equity and Venture Capital Association (EVCA) and the European Commission (EC), sparked an explosion of new stock markets across Europe that were intended to better serve the unique needs of technology growth companies. Although AIM was the first of the new markets, it was the inception of Easdaq—a pan-European exchange modeled after Nasdaq—that induced the birth of half a dozen “new” exchanges.

Easdaq sparked a nationalist and protectionist response across Europe that subsequently fueled the explosion of the other exchanges. Based on extensive data from numerous interview respondents, the critical factors that enabled the birth of Easdaq were:

- The commitment and drive of a small group of top leaders;
- A vision that united various communities behind a single cause;
- Support from two key institutions: EVCA and the EC.

EVCA played a critical role as the platform from which the concept of Easdaq was evangelized, while the EC provided financial support and legitimacy to the
working group that established Easdaq. The EC’s crucial support was won because the vision of Easdaq resonated with the EC’s top priorities at that time.

**Downfall of the 90s Growth Markets** Based on overwhelming data collected through the interview process, three factors have emerged as the critical causes for Easdaq and the other growth exchanges to collapse, including i) nationalistic competition via a proliferation of new exchanges, ii) inability of any of the new exchanges to accumulate a critical mass, and iii) poor timing vis-à-vis the dot.com crash. Additionally, the irrational behavior of the markets may have driven a pace of growth that was unsustainable. There were also several factors specific to Easdaq that contributed to its troubles above and beyond those already mentioned.

Led by Paris, local exchanges across Europe launched their own separate markets focused on technology growth companies as nationalist and protectionist responses to Easdaq. The net effect of such nationalism was an overcrowded marketplace for growth exchanges and a fierce level of competition between them.

Further, none of the new exchanges acquired sufficient critical mass—defined as the minimum number of listed companies, intermediaries, and investors required to make the market a liquid, self-sustaining, and ongoing concern—to survive the collapse of the internet bubble. For a new exchange, this presents a befuddling “chicken and egg” dilemma. To attain critical mass for liquidity, the exchange needs the participation of the investment banks; the investment banks won’t give their patronage to an exchange until they see sufficient liquidity.

Timing was frequently cited as the decisive blow that knocked out Easdaq and the other growth exchanges of the 90s. After the bubble burst, the market for technology IPOs dried up, and the new exchanges were unable to secure new listings. With listing and trading fees as the primary source of revenue, the growth exchanges began to bleed red ink. By 2003, with technology still a dirty word, their fate was all but sealed.

In addition to tribulations faced by all the growth markets, Easdaq (and Nasdaq Europe) had its own unique challenges that hastened its downfall, including:
- Inexperience with market making, and an excessive spread
- Location in Belgium, where there was no support from an established local exchange
- Substantial undercapitalization
- Inefficiencies due to an extra layer of regulation
- Intersettle for clearing and settlement

**Analysis of the Core Problem** When compared against the US, Europe’s underperformance in producing globally competitive technology companies is practically irrefutable. During the last quarter century, the US has vastly outperformed Europe in producing VC-backed companies with market caps in excess of $500 million. According to Lester Thurow, a prominent MIT economist, of the world’s 25 largest companies in 2000, 6 were US companies that were founded after 1960, including Microsoft and Intel. None were European companies. While Europeans appear to be greatly divided on the
underlying causes of this problem, data from both the interviews and literature research points to three key factors:

1. Fragmentation in the marketplace, resulting from the fact that Europe is a collection of individual nations with very distinct cultures;
2. VC investments being spread too thinly across too many companies, resulting from immaturity and risk-aversion within the European VC community;
3. The absence of a well-functioning IPO market for European tech stocks, resulting from fragmentation in the capital markets

**NATIONAL AND CULTURAL FRAGMENTATION** The national and cultural fragmentation within Europe is perhaps the most obvious impediment to the rapid growth of technology startups. There is no single “European Market.” Europe is a collection of smaller sub-markets, each with its own nuances. The European Union, with 25 member nations and nearly 500 million people, is a giant step towards increased harmony, but Europeans still identify with their national origins above their status as Europeans. Further, each country still maintains its own regulations, language, and cultural norms. To make matters worse, Europe lacks centers of critical mass—equivalent to Silicon Valley and Boston—where entrepreneurs, investors and engineers aggregate for synergy. The challenges presented by this fragmentation were experienced first-hand by Starbucks, which has enjoyed widespread penetration in England, but is not nearly so palatable to the Italians, who are very particular about their coffee. The net effect is that growing a technology company in Europe to the level of a global competitor can be very difficult. By contrast, consider the US where an entrepreneur immediately faces a market of 290 million people with one language and a single federal government.

**VENTURE CAPITAL SPREAD TOO THIN** The second factor that contributes to Europe’s inability to produce globally competitive technology companies is the venture capital communities pattern of investing funds too thinly across too many startups. In 2003, the European VC community invested about $10 billion in 6,400 portfolio companies. The US, by contrast, invested more than $18 billion, but in only 2,700 portfolio companies. Accordingly, the average VC investment in the US is about $6.6 million, while the average VC investment in Europe is only $1.2 million. Thus, if a European and US tech startup were competing in the same market place, the US company would have on average 5 times the amount of capital. The contrast is equally stark if we look specifically at seed investments. European VCs made 377 seed investments averaging about $500 thousand each, while US VCs made only 181 seed investments, averaging about $2 million each.
A picture emerges that European tech companies are underfunded at all stages of VC. Further, too many receive funding which creates an overly competitive landscape. This phenomenon can be explained as a combination of risk aversion and immaturity within the VC community. Both characteristics are represented by the fact that nearly two-thirds of all VC deals in 2003 involved no syndication, and only 18% involved transnational syndication.

**CAPITAL MARKET FRAGMENTATION**

Fragmentation of Europe’s capital markets is the third key factor contributing to lack of performance in technology. Having a national stock exchange is perceived as a source of national pride. Consequently, Europe is now home to more than 30 exchanges. A recent Grant Thornton report identified 21 of these as “new markets,” defined as those that cater to small, young, technology-focused companies with growth potential. These 21 markets share a pool of about 1400 listed companies, but four didn’t have a single listing at the start of 2004, and
only 5 had 40 or more listings. Of those, only Italy’s Nuovo Mercato had an average market cap greater than $100 million. Clearly, this is an unsustainable situation where the supply of exchanges outstrips market demand. By contrast, the US has effectively two markets, and Nasdaq alone has over 3000 listed companies, with an average market cap over $900 million.

This fragmentation reduces the liquidity for listed companies for several reasons. First, local regulators tend to favor local companies and intermediaries. Second, exchanges don’t inspire the same degree of trust and confidence among investors from other countries. Third, there are significant differences in transaction costs between the exchanges. As a result, the few European tech companies that reach a level where they need large amounts of capital for global expansion find it difficult to raise it from the public markets.

The absence of a dedicated market for technology growth companies has several other negative effects. Because of the process by which companies are valued during M&A via comparison with publicly traded companies, the absence of a well functioning market for tech IPOs results in lower M&A valuations. Further, the absence of a market also pushes Europe’s best talent and technology to the US. In a recent article in the Financial Times, Ann Mettler claims that Europe has lost some 400,000 scientists who are now working in the US.

OTHER FACTORS Many of the interview respondents pointed to other social and cultural factors as root causes for Europe’s underperformance, including the European inclination towards socialism, cultural intolerance for failure, lack of entrepreneurship within Europe, and lack of a pan-European regulatory organization. While there may be more than just a kernel of truth to these issues, the fact that Europe funds too many startups, and access to public capital is weak, indicates that these are secondary factors, not core causes.

IS THERE A NEED? The net effect of the absence of a well-functioning IPO market for technology companies, combined with the VC community’s practice of funding too many companies and spreading their investments too thin, is that Europe’s technology companies are starved for cash at both ends of the technology capital pipeline. At the beginning of the capital pipeline—seed through expansion funding—they are not receiving enough funding to gather momentum to ever grow to a size that would support an IPO. Further, too many receive funding, and thus they all face an overly competitive landscape.

At the other end of the pipeline, those few VC-backed companies that do make it to the doorstep of global expansion find it exceedingly difficult to raise large amounts of capital from the public markets. This is the direct result of the absence of a dedicated market for tech growth stocks. In the middle, without the potential for a healthy valuation via IPO, negotiated exits via M&A transactions have depressed valuations. Consequently, Europe’s best entrepreneurs, engineers and technology are drawn away from Europe to the US where the possible rewards are greater.
In this scenario, everyone loses: the entrepreneur, the investor, and Europe as a whole. It is in this context that the need for a well functioning market dedicated to Europe’s technology growth stocks becomes apparent. Such a market would have three crucial benefits. First, it would greatly improve the ability of Europe’s best VC-backed companies to raise the large sums of capital required to compete globally. Secondly, by virtue of the process by which M&A transactions are evaluated, it would increase the average valuations. Third, it would help to retain Europe’s best entrepreneurs, scientists and technology by providing a pathway for them to be recognized and rewarded at a level commensurate with that of the US.

**What it Should Look Like**  Given the original scope of the study, substantial data on the optimal form and feasibility of a dedicated market for Europe’s tech stocks was collected. First, a successful market must enable companies to access local investors while simultaneously pulling from a pan-European base of investors. The local markets are most effective at providing capital and liquidity when tech companies are in their infancy. However, when they grow large enough to expand globally, they will need a depth of capital and liquidity that can only be amassed at a pan-European level.

Second, the ideal market will also be based on market making, which is the only model that can generate liquidity for small-cap stocks while simultaneously paying for the required research. The ideal market will also be investor-focused. To inspire investor confidence, the market should have increased levels of disclosure and transparency. To prevent dumping of shares, it should also incorporate a registration process that imposes a time-delay for a given percentage of registered shares. Further, any new initiative should be backed by an ample budget, and should run an extensive marketing campaign across Europe to project the image of being the place for tech growth securities.
Lastly, based on the lessons learned from the downfall of the 90s growth exchanges, the best home for a renewed effort would be one with a strong home market. A new initiative must build critical mass as quickly as possible, and be able to stave off the inevitable national response from the local markets. If located in a small market, the new initiative risks losing liquidity and listings to a larger market.

There is much data to support the notion that London has a critical mass of financial institutions, entrepreneurship, and liquidity to best support any efforts to create a dedicated technology market. In the PricewaterhouseCoopers 2003 IPO report, London secured 52% of the total IPOs in Europe. It also raised 44% of the total offering value from all European IPOs. According to the 2004 EVCA Yearbook, the UK leads Europe as both the destination and country of management for all VC and PE investments in Europe. Given its financial dominance within Europe, London would serve as the best home for any new initiative.

**IS IT FEASIBLE?** There have been several key changes since the mid-90s attempt to launch Easdaq that will facilitate a renewed effort to create a pan-European tech market. First, there has been widespread adoption of the Euro (with the notable exceptions of England, Switzerland and the Nordic countries). Europe has experienced increased regulatory harmonization via FSAP and securities directives. Nearly all of the exchanges today are publicly-traded companies themselves, reducing the likelihood that they will favor intermediaries, who used to be member-owners. Also, technology advances have vastly improved the clearing and settlement processes.

Some of the changes, however, will make efforts more difficult. Chief among them are painful memories of the recent dot.com collapse and the failures of Easdaq (Nasdaq Europe) and the other growth markets. Further, these changes have led to a reduced availability and demand for research, which will impede adoption of the market making model. Perhaps most challenging is the continued strangle-hold of the US capital markets; Europe’s best tech companies will naturally look to Nasdaq before any new European initiative.
Beyond these changes, the feasibility of such an attempt will hinge on two key factors: whether there is a sufficient supply of quality technology companies within Europe, and whether there is sufficient demand from investors for tech securities.

Regarding the supply of technology companies, consider the number of IPOs that could be generated from Europe’s $10 billion investment in 2003. From 1995 to 2003, the US produced 0.04 IPOs per investment, or 4.05 IPOs per $1 billion invested. This suggests that if Europe altered its investment patterns to more closely mirror those of the US—i.e. larger investments in fewer companies—the class of 2003 had the potential to produce 40 IPOs. Even if this number were discounted by 50% to account for Europe’s inherent cultural and market fragmentation, it would still have produced 20 IPOs. If sustained annually, clearly there would be enough companies to support a dedicated market.

As another litmus test, consider the 1400 companies currently listed on Europe’s “new” exchanges. If they were aggregated on one single exchange, it would be approximately half the size of Nasdaq. Undoubtedly, many of these companies would not survive given their small size. Equally likely however, those that did would experience greater liquidity and growth, and create an upward spiral.

Demand for tech stock within the European investment community is far more difficult to predict. Clearly, demand is currently lacking. This is not surprising given recent memories of the dot.com crash. Further, European retail investors have a history of non-participation in equities. However, if this asset class performed better and the tech community produced a few visible success stories, it is not unreasonable to assume that Europeans wouldn’t patronize the tech markets, just as they did in the late 90s.

**RECOMMENDATIONS: A TWO-FRONT ATTACK** Despite consensus on Europe’s underperformance in technology, how to address the problem is a matter of far greater controversy. However, given that a holistic analysis reveals that European tech companies are starved at both ends of the capital pipeline, I believe the solution is to attack the problem on two fronts: venture capital investment practices, and the absence of a well-functioning IPO market for tech stocks.

**UNDERPERFORMANCE IN THE VC COMMUNITY** Skeptics will be critical of any attempts to address the public markets if they don’t see the VC community improve its strategies for growing tech companies. To begin, the VC community must become emboldened and shake off their aversion to risk. This means dramatically increasing the average amount invested in a given company, while simultaneously reducing the number of companies that get funded.

The VC community also has the opportunity to lead Europe to a higher level of cooperation and collaboration by increasing cross-border syndication. To offset the increased risk of larger investments in fewer deals, the VC community will need to dramatically increase the level of trans-national syndication.

Further, the VC community can help to foster the emergence of centers of entrepreneurial excellence similar to Silicon Valley and Boston. This can be
accomplished by identifying where these centers have natural roots, and then focusing investment activities there. The objective would be to generate synergy by drawing Europe’s best entrepreneurial and engineering talent to a limited number of centers through focused investment activities.

**STARVATION AT THE PUBLIC MARKETS** Concurrently, a dedicated, pan-European market for technology growth securities should be established. In addition to enabling the best companies to raise the capital required to compete at the global level, such a market will also improve M&A valuations and help to keep Europe’s best talent in Europe.

The interview data proved to be fertile ground for finding solutions for creating such a market, including a collaborative effort among LSE, Deutsche Börse and Euronext, building AIM into a pan-European tech exchange, and systematically grooming Europe’s best VC-backed companies for a Nasdaq listing—each with advantages and disadvantages.

A marketplace within Euronext, however, represents an attractive opportunity for several reasons. To begin, the interview data overwhelmingly supports an initiative that builds off an existing exchange, rather than creating a new exchange. Further, of the eight exchanges represented in the study (including LSE/AIM and Deutsche Börse), only Euronext expressed a willingness to address the problem faced by technology startups. With exchanges in Lisbon, Paris, Brussels, and Amsterdam, Euronext already leverages local markets, while simultaneously drawing liquidity at the pan-European level—a key attribute of the ideal market. Lastly, Euronext represents the second-largest pool of liquidity within Europe, which will help it to quickly acquire critical mass. The glaring disadvantages of Euronext are that it does not use the market-making model, and it is not located in London.

Given the importance of technology to economic development and progress, underperformance in producing globally competitive technology companies should be of concern to all Europeans. Already trailing the US economy, Europe is now in danger of falling behind China and other Asian rising stars. With global markets currently on the upswing, now is the time for Europeans to show unity and get behind a plan to improve the performance of technology startups, and investors’ ability to profit from them. As exemplified by the rise of Easdaq, great accomplishments often are borne of the efforts of a small group of dedicated and highly motivated people, rather than large committees and organizations. If nothing else, it is my hope that this report will spark the debate among Europe’s leading executives from whom that plan arises.
Emergence of the 90s Growth Markets

The rise and fall of Europe’s growth markets during the mid to late 90s offers a dramatic story of courage, vision, struggle, fierce competition, explosive growth and painful failures. In the wake of the dot.com implosion, most of these markets have since ceased to exist, and Europe is still reeling from the loss of money and dreams that followed their collapse. However, change and struggle in Europe are ever present, and many of the business elite are already looking ahead to the next stage in the evolution of Europe’s technology markets. In this context, a review and analysis of the factors that led to the emergence and downfall of the 90s markets can yield a wealth of lessons learned.

A Brief History

During the early 90s, a successful effort led by the VC and PE communities, and supported by the European Private Equity and Venture Capital Association (EVCA) and the European Commission (EC), sparked an explosion of new stock markets across Europe that were intended to better serve the unique needs of technology growth companies. The earliest of these “new” exchanges was the Alternative Investment Market (AIM), which had its first listing in 1995. AIM was first announced in a proposal by the London Stock Exchange (LSE) in April 1994 in response to heavy lobby from the City Group for Smaller Companies (CISCO), led by Sir Ronald Cohen of Apax Partners and Andrew Beeson of Beeson Gregory. CISCO’s lobby was motivated by the recent closure of LSE’s second-tier Unlisted Security Market (USM), which had been shut down in 1992 due to poor performance and lack of investor interest. With the USM’s closure, Cohen and Beeson were gravely concerned about the lack of a public market that was conducive to their small-cap technology investments.

Although AIM was the first of the new markets, it was the inception of Easdaq—a pan-European exchange modeled after Nasdaq—that induced the birth of half a dozen “new” exchanges across Europe. By the time AIM had been announced by the LSE in 1994, Dr. Jos Peeters of Capricorn Venture Partners in Leuven, Belgium, was already working on a plan for a stock exchange based on an initial outline first presented by Cohen in June 1993. Cohen had proposed to create a Nasdaq-like exchange in the UK, and then extend the model by connecting a network of nationally based exchanges. Peeters liked Cohen’s idea, but believed the exchange needed to be truly pan-European rather than a conglomerate of local exchanges. Peeters was successful at persuading Cohen and others that Europe needed—and could support—a single pan-European exchange dedicated to technology growth companies based on the model of Nasdaq.

A recent regulatory development made Peeters’ pan-European model appear to be both feasible and intriguing. In May of 1993, the EC passed the Investment Service Directive (ISD), an important piece of legislation that was crucial to the implementation of a pan-European exchange. Under this new directive, an
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A Pan-European exchange could legally be set up in a single European country and still operate on a pan-European basis. The basic notion was that investment services could operate with a single ‘passport’ that would ensure mutual recognition among any member country of the EC. Although the ISD wouldn’t take effect until 1996, it paved the way for a single pan-European exchange.

EVCA and officials from the European Commission met in October 1993 and the concept of a Nasdaq-like, pan-European exchange was again presented. Struggling to pull Europe out of economic doldrums, the EC was immediately interested in the proposal. The EC had been looking for methods to reduce European unemployment and increase jobs, while at the same time improve Europe’s ability to catalyze the growth of high-tech industries in Europe, which were lagging behind the US. The EC saw the birth of a pan-European exchange dedicated to technology growth companies as a brilliant solution to both of these issues. Further, it meshed very well with their objective of integrating European financial systems. Subsequently, both EVCA and the EC agreed to allocate a small budget to finance a feasibility study to determine the need and potential for such a market.

In February 1994, the EC funded a task force that was set up by EVCA and headed by Peeters. The task force had two primary goals; 1) to produce well defined recommendations for the creation of a dedicated market and 2) to identify the best organizations to carry out these recommendations. The task force pulled together a team of 28 representatives of venture capital, private equity, investment banking, institutional investors, and several of the major European exchanges.

During the summer of 1994, the EC funded a study by Coopers & Lybrand which showed that Europe indeed had enough technology companies to support a dedicated exchange. With mounting momentum, the task force assembled a consortium that included the Paris Stock Exchange, Nasdaq, EVCA, and a group led by Cohen, and began formulating the framework for a new exchange. The result of their efforts was a detailed plan for a European equivalent of Nasdaq, called Easdaq [Lerner, 1995]. Two pivotal design issues that were outlined in the plan were the trading model for Easdaq, and it’s location. Both issues would ultimately prove problematic for Easdaq.

To ensure that the smaller stocks had adequate liquidity, Easdaq adopted the Nasdaq trading model of market making, whereby market makers—often the underwriters for a given firm—were motivated by a fee based on the volume of transactions for a particular stock. To keep volumes high, the underwriter was motivated to produce a higher level of analysis on the stock. This ensured that even the smaller stocks would receive sufficient analyst coverage to draw investors. Europe’s lack of familiarity with the market-making system, however, would later prove to be a handicap for Easdaq.

Brussels was chosen as the headquarters of Easdaq for several reasons. First, the task force was aware that nationalism in Europe would be a problem for any pan-
European initiative. Brussels was perceived to be the most neutral location, and least likely to evoke a nationalistic backlash. Secondly, regulators at the local exchanges were believed to be influenced by local constituents, and would favor the local companies over foreign entrants. Brussels, however, was willing to change its securities legislation to allow Easdaq to be established as a self-regulated exchange, with the local regulators (the CBF) acting only as a second-line supervisor. This was intended to eliminate the ability of the Brussels regulators to play favorites.

Prior to formally establishing Easdaq, the task force established a non-profit organization called the European Association of Securities Dealers (EASD). EASD was tasked specifically with resolving challenges faced during the implementation of Easdaq. The mission of the EASD was to “develop the securities markets for growing enterprises in Europe.” To that end, EASD had three main objectives [Lerner, 1995]:

1) To advise on the organization of European stock markets for growth and small-cap companies;
2) To work towards a more favorable legal, fiscal and regulatory environment and make policy recommendations;
3) To provide a unique pan-European forum by providing information, training, networking and other relevant services.

With the EASD in place, the plan complete, and the market primed, Cohen’s and Peeters’ concept was on the verge of becoming a reality. After much anticipation, Easdaq opened its doors for its first listing on November 27, 1996.

The birth of Easdaq however was only the beginning of a wave of new exchanges, largely motivated by nationalism and protectionism (factors that will be explored in greater detail in subsequent chapters). In April of 1994, Jean-François Théodore, then president of the Societe des Bourses Fraincaises, announced that the Paris Stock Exchange would be interested in the Easdaq initiative. This led to the Paris Stock Exchange’s participation in the Nasdaq consortium, as mentioned above. Sensing that Paris was motivated to make Easdaq Franco-centric, Peeters and his team were careful to limit the French influence, and to maintain Easdaq’s pan-European status. Under pressure from French regulators, this presented problems for Théodore. By 1995 he announced that Paris was pulling out of the Easdaq project and creating its own growth exchange, the Nouveau Marché.

The Nouveau Marché, which had its first listing on March 20, 1996, was clearly a nationalistic reaction against Easdaq. Théodore and others in the French community worried that French companies would leave Paris to list on the new market. The natural conclusion of this trend was that it would disrupt the infrastructure of institutions that supported the French market.

Encouraged by the French, several other European countries also launched their own initiatives. Through the second half of the 90s, technology growth exchanges appeared in the Netherlands (Nieuwe Markt, 1997), Germany (Neuer Markt, 1997), Belgium (EuroNM Belgium, 1997), Sweden (New Market, 1998), Italy (Nuovo Mercato, 1999), Spain (Nuevo Mercado, 2000) and Denmark (KVX
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Growth Market, 2000). The EuroNM was subsequently launched as a pan-European consortium that included the Nouveau Marché, Neuer Markt, Niewe Markt, EuroNM Belgium, and Nuovo Mercato.

By many measures, the new growth exchanges were remarkably successful. As indicated by the number of companies listed, new IPOs, and the amount of capital raised, the combined early success of both Easdaq and the various exchanges that comprised EuroNM was quite impressive. The figure below shows the total number of listings on Easdaq and EuroNM between January 1996 and October 1999:


Consider a recent analysis [Manigart, De Maeseneire, 2003] of the initial returns of 300 of the 307 IPOs (not including dual listings)° traded on both Easdaq and the EuroNM before October 1, 1999. In just a few short years, the new markets raised a combined €10.2 billion on 300 IPOs.

° Does not include 7 IPOs for which there is insufficient data.
Initial Returns for 300 IPOs on Easdaq and EuroNM  
[Manigart, De Maeseneire, 2003]

<table>
<thead>
<tr>
<th>Market</th>
<th>IPOs</th>
<th>Market Cap at IPO (x 1m)</th>
<th>Funds Raised at IPO (x 1m)</th>
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<tr>
<td></td>
<td></td>
<td>Avg.</td>
<td>Total</td>
</tr>
<tr>
<td>Easdaq</td>
<td>35</td>
<td>€ 152.93</td>
<td>€ 5,352.00</td>
</tr>
<tr>
<td>EuroNM</td>
<td>265</td>
<td>€ 113.56</td>
<td>€ 30,093.00</td>
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<tr>
<td>Neuer Markt</td>
<td>146</td>
<td>€ 163.58</td>
<td>€ 23,882.00</td>
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<tr>
<td>Nouveau Marché</td>
<td>93</td>
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<td>€ 347.00</td>
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<tr>
<td>Total Sample</td>
<td>300</td>
<td>€ 118.15</td>
<td>€ 35,446</td>
</tr>
</tbody>
</table>

By the end of 2000, the member exchanges of EuroNM had a combined 567 listings and had raised over €40 billion. [Bottazzi, Da Rin, 2002]. Further, the EuroNM All-Share Index rose 561% between January 1988 and March 2000 [Ferrary, Grosclambert, Antipolis, 2004].

Beginning with 2001, however, things were starting to sour. The effects of the dot.com crash were ravaging the technology industry, and the market for technology IPOs all but dried up. With far fewer listed companies than anticipated, and investors running for the door, all the new markets began to feel the financial crunch from the lack of listing and trading fees.

The dot.com crash heralded the end for most of the growth exchanges that got their start in the mid-90s.

Easdaq, like many of the other new exchanges, was facing financial difficulties, which made it vulnerable on several levels. Nasdaq had taken an active interest in Easdaq since their participation in the 1994 consortium. With a strategy for global expansion, Nasdaq looked upon Easdaq as a potential entrée into Europe. While Easdaq was struggling financially, Nasdaq bid its time in a strategy to acquire the company at the height of financial distress. In 2001 Nasdaq acquired Easdaq when it was on the verge of bankruptcy, and re-branded it as Nasdaq Europe. Some of the shareholders were disappointed with the outcome, but according to Leo Goldschmidt, a former EASD board member, many Easdaq shareholders viewed Nasdaq as a “savior in waiting,” indicating how grave the situation was for Easdaq.

The bloodbath continued, however, and with mounting losses and no sign of a revival of the European tech sector, Nasdaq made the decision to close down Nasdaq Europe in June 2003. They were not alone. The Neuer Markt was closed in 2002, and by the end of 2003 most of the “new” exchanges either ceased to exist or were wastelands for the walking dead. In 2004 the Nouveau Marché was absorbed into Euronext, and AIM is now the sole survivor of the original “new” exchanges that could boast any degree of success.
SPARKS THAT LIT THE TORCH

With the clarity of hindsight, it is possible to pinpoint various salient elements that spurred the birth of Easdaq and the other growth markets of the 90s. Chief among them is the focus and drive of a small group of committed “movers and shakers,” a clear vision that united multifarious communities, and the support of key institutions.

As with most historical movements, the spark that ignited the torch of new markets that arose in the 90s was lit by one or two individuals, not committees or governments. The first of these markets, AIM, was the direct result of Sir Ronald Cohen, who stood up in protest of the LSE’s closing of the USM. Cohen was also the original visionary of a European exchange modeled after Nasdaq and based in London. Dr. Jos Peeters extended Cohen’s vision of an exchange model after Nasdaq to the pan-European level. Together, Peeters and Cohen carried the torch to industry heavyweights and organizations that got behind the movement and enabled the birth of Easdaq. Without the energy and focus of these two individuals, Easdaq, which subsequently sparked the emergence of the other 90s’ growth markets, would likely never have existed.

The critical factors that enabled the birth of Easdaq were:
- The commitment and drive of a small group of individuals;
- A vision that united various communities behind a single cause;
- Support from key institutions.

The importance of a well-articulated vision in building a following for Easdaq cannot be overstated. The concept of a pan-European exchange for technology growth companies resonated with a wide variety of constituents, including venture capitalists, investment bankers, fund managers, and the European Commission—often for different reasons. The VCs wanted more exits and better liquidity, the fund managers wanted bigger returns, and the EC wanted to address Europe’s unemployment and underperformance in technology. The vision for Easdaq united all these constituents behind a single cause and secured their involvement, which was necessary to get Easdaq off the ground.

In addition to the participation of various industry heavyweights, legitimacy and momentum to the “Easdaq” movement, and that of other growth exchanges, came with the support of key institutions. For Easdaq, EVCA and the European Commission were particularly important. EVCA provided Cohen and Peeters a platform from which to proselytize, a framework to recruit and assemble the key players in various industries, and funds for some of the initial studies. In addition, the involvement of the EC made the movement credible at the pan-European level. Launching Easdaq without the support of either of these institutions would have been impossible.

As a final note on the critical elements that led to the birth of the new markets, it is worth mentioning that the concept of Easdaq would have been moot without the passage of the ISD. This directive was a decisive step towards increased regulatory harmony at the pan-European level. Although credit must be given to the foresight of the EC in passing the ISD, much ground is still left to cover before the financial sector can benefit from ubiquitous pan-European regulation.
**Downfall of the 90s Growth Markets**

Based on overwhelming data collected through the interview process, three factors have emerged as the critical causes for Easdaq and the other growth exchanges to collapse: i) nationalist competition via a proliferation of new exchanges, ii) inability of any of the new exchanges to accumulate a critical mass, and iii) poor timing vis-à-vis the dot.com crash. Additionally, the irrational behavior of the markets may have driven a pace of growth that was unsustainable. There were also several factors specific to Easdaq that contributed to its troubles above and beyond those already mentioned. All will be considered in greater detail below.

**COMPETITION: THE NATIONALIST AND PROTECTIONIST RESPONSE**

As mentioned previously, Easdaq was the spark that ignited an explosion of new exchanges across Europe. When Easdaq grew from a concept to a reality, the reaction of the local exchanges was swift and fierce. Easdaq represented a serious threat to the balance of their ecosystems. In the words of Stephen Schweich, Partner at Bullhound in London, and a former Easdaq board member;

“The whole financial community that relies on listings is an ‘ecosystem.’ It is centered around the local exchange, and doesn’t want the capital raising process to go to a neutral ground, where they lose their competitive edge.”

Led by Paris, local exchanges across Europe launched their own separate markets focused on technology growth companies. According to Leo Goldschmidt, the French actually campaigned against the concept of a pan-European exchange and encouraged other countries to begin local exchanges of their own.

Thus was borne the Nouveau Marché (Paris), the Neuer Markt (Frankfurt) and a host of other national growth exchanges. In most cases, these exchanges were offshoots of the local main exchange, and some even had government support. This gave them a tremendous advantage relative to Easdaq in getting up and running quickly. In every case, nationalism was the motivating factor for their inception.

To underscore the deep roots of nationalism in this process, consider the response of local companies to the pending merger of LSE and Deutsche Börse several years ago. Under the proposed terms, LSE was to take all blue-chip listings, and the Deutsche Börse was to get growth listings. Upon learning of the new arrangements, Porsche—one of Germany’s most prominent blue chips—refused to move their listing to London. The merger was eventually abandoned.

According to at least one interview respondent, even Belgium, the very home of Easdaq, had its own protectionist response. In the view of David Adams,
partner at Travers Smith Braithwaite in London, and a former EASD board member;

“[The CBF, the regulatory body in Brussels responsible for reviewing and approving the prospectuses of listing companies] were absolutely awful, and regarded Easdaq as a nuisance and a secondary market. Often there was only one person dealing at the CBF to deal with Easdaq listings, so documents went through very slowly.”

(While this may appear to have been a protectionist response from the Belgian regulators trying to guard their home market, it is important to note that the CBF played only a second-line role in the listing process for Easdaq, and their approval wasn’t necessary to get a company listed.)

The net effect of such nationalism was an overcrowded marketplace for growth exchanges, and a fierce level of competition between them. Even in the absence of other factors, this alone may have led to a rapid demise and/or consolidation for many of the new exchanges.

**Critical Mass: Lack of Participation from Investment Banks**

It is almost self evident that none of the new exchanges acquired sufficient critical mass to survive the collapse of the internet bubble. Critical mass may be defined as the minimum number of listed companies, intermediaries, and investors required to make a market or exchange liquid, self-sustaining and an ongoing concern. Many of the interview respondents indicated that participation from the large investment banks was the missing linchpin that prevented any of the exchanges from acquiring critical mass. Because the investment banks have the most influence on where a company looks to be listed, they will bring listings to the market, and research to support their listed companies. This ultimately leads to participation from investors.

However, according to Alan Whittaker of Lehman Brothers in London, investment banks will always recommend to their clients the market they believe will provide the most liquidity. “We don’t have loyalty to a particular exchange. We are obligated by law to advise for the best liquidity,” he says.

* It is important to note that while most investment banks will state that their recommendations are solely motivated by liquidity and market cap in their clients’ best interest, the process by which they recommend a particular exchange appears to be more complex, and perhaps less transparent. Factors such as cost and the ease with which a listing can be acquired, as well as familiarity with local regulators, were cited by several respondents as factors that influenced the recommendations offered by underwriters to their clients.
For a new exchange, this presents a befuddling “chicken and egg” dilemma. To attain critical mass for liquidity, the exchange needs the participation of the investment banks; the investment banks won’t give their patronage to an exchange until they see sufficient liquidity.

Lack of participation from the investment banks was frequently cited as one of the top three reasons for Easdaq’s demise. In the words of Stanislas Yassukovich, former Chairman of Easdaq:

“…critical mass requires the participation of the investment banks. The investment banks won’t participate until there is critical mass…"

Closely related to the participation of the investment banks, the new exchanges also failed to gather a critical mass of institutional investors. Committed and reliable participation from institutional investors is a critical factor in maintaining the liquidity of a market, but it, too, suffers from the chicken and egg syndrome. The institutions don’t want to participate until they are confident that the liquidity already exists.

**TIMING**

Timing was frequently cited as the decisive blow that knocked out Easdaq and the other growth exchanges of the 90s. There is no question that the dot.com crash was a critical factor in the demise of the technology markets that got their start in the mid 90s. After the bubble burst in 2000, the market for technology IPOs dried up, and the new exchanges were unable to secure new listings. As their losses mounted, Europe’s retail investors, still new to the concept of equity investing, increasingly eschewed tech stocks. Further, none of the markets had yet accumulated the critical mass of investment banks or institutional investors, and listed companies began to drop. With listing and trading fees—the primary source of revenue for exchanges—in sharp decline, the growth exchanges began to bleed red ink. By 2003, with technology still a dirty word, their fate was all but sealed.
By contrast, Nasdaq had a long incubation period—free of catastrophic trauma—which enabled it to plant its roots. It had its start in 1971, and lingered for years as a mediocre exchange before the likes of MCI, Microsoft and Intel sprung up, making Nasdaq a household name.

Equally as important as the dot.com crash, the ascendance of the dot.com boom played a significant role in Easdaq’s demise. Easdaq was launched in 1996, just as the dot.com boom began to rise. The hype created an urgency with the local markets such that none of them could afford to miss out, and this, combined with the nationalism mentioned above, created pressure for them to establish their own exchanges. As the hype grew, so did the pressure for all the exchanges to grow at an unsustainable rate. Easdaq had planned on a much more gradual ascendancy, and wasn’t adequately prepared when the dot.com boom sped up the timetables.

**IRRATIONAL MARKETS AND UNSUSTAINABLE GROWTH**

Given Europe’s relative inexperience with capital markets for high-growth, high-tech companies, the entire sector faced fundamental, and perhaps intractable, challenges by trying to scale up so quickly during the hype of the internet boom. According to Eric Achtmann of PolyTechnos Venture-Partners in Munich, “There was a severe lack of proper controls and disciplines in running the ‘new’ exchanges from the very beginning.” With no prior history of operation under sound business principles, these exchanges had no reference point to return to after the collapse of the bubble.

The Neuer Markt, for example, which had its first listing on March 10, 1997, got started when many of the basic principles of business, such as the need for a company to have customers and earnings before going public, were abandoned amidst the hype of the internet craze. In feeding the demand, the Neuer Markt listed many companies that should never have had a public listing, and many investors eagerly took the bait. By the fall of 2002, after the bubble burst and the “old” business principles were again in effect (perhaps to the extreme), the Neuer Markt had lost nearly all of its value. With no history of sound business practices to revert to, the Neuer Markt, and all investor interest in “new” companies, collapsed.

By contrast, the irrational behavior that led to similar consequences with Nasdaq could be viewed as an aberration that occurred after 25 years of operation under sound business practices. As such, the Nasdaq was able to fall back on its previous experience as a baseline, and retain sufficient demand and momentum to survive the collapse.

The craze for growth also had a significant impact on the wider industry that supported technology growth companies. Achtmann believes that given the amount of experienced manpower that is required, it was virtually impossible to scale the markets and tech sector as quickly as was attempted. “There was simply a lack of competent, experienced professionals to manage the process,” he states.
Anyone who has managed the growth of a services business can attest to the challenges of finding sufficient talent when trying to scale an organization too quickly. At the height of the internet craze, investment banks, consultants, and tech companies were offering unheard of signing bonuses and new cars in an effort to compete for the limited talent available in the market. People fresh from MBA programs were given authority beyond their capability in critical roles, such as technology analyst or director of business development. To compound the problem, the high-tech sector, by definition, deals with new technologies which are inherently difficult to analyze, compare or build strategies for. With inexperienced managers facing exceedingly difficult challenges at all levels, the entire sector was poised to implode.

**FACTORS UNIQUE TO EASDAQ**

In addition to the pressures faced by competition, the struggles to attract the participation of investment banks to a new market, and the implosion of the dot.com sector, Easdaq had its own unique challenges.

*Market Making:* For Easdaq, a major side effect of lack of critical mass was the subsequent lack of information available on the listed companies. With an insufficient number of companies and intermediaries, the research available was scant. This resulted in a much higher degree of asymmetric information, which consequently increased the risk assumed by the market makers. This increased risk was reflected in a larger buy/sell spread. In addition, it was noted that the market makers also did not compete amongst themselves. In contrast to Nasdaq, where fierce competition between the market makers keeps the spread down, the lack of competition on Easdaq further increased the spread. Consequently, the often excessive spread deterred investors, which reduced liquidity, causing a downward spiral. Many of the interview respondents indicated that the large spread was a critical factor in the Easdaq’s downfall.

This problem was complicated by the fact that market making was new to Europe, and Easdaq lacked executives with experience in this type of model. According to Javier Echarri, Secretary General of EVCA, the general absence of expertise among Easdaq executives, particularly with regard to market making, resulted in a slower launch relative to the local exchanges. This gave the competitive exchanges time to ramp up before Easdaq gathered momentum of its own.

*Location:* The strategy to put Easdaq in Brussels, so as not to incite the anticipated nationalistic response, ultimately put Easdaq at a significant disadvantage relative to the competitive exchanges because it had only a small market to draw from. In contrast, the growth markets in London, Paris and Munich could draw on a significantly larger local base of investors, companies
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and intermediaries. Further, without the support of a parent exchange, Easdaq had to grow its base of constituents from scratch, while the Nouveau Marché and Deutsche Börse could pull from their parent markets. This exacerbated for Easdaq the challenge of creating critical mass, as described above.

The inability of Easdaq to attract the participation of the investment banks was confirmed by Sake Bosch, Managing Director of Prime Technology Ventures in Amsterdam, who says that the investment banks in the early 90’s were highly country-focused. As a pan-European exchange, and without sufficient liquidity, “it wasn’t clear what value Easdaq offered to attract the attention of the local investment banks [in Holland, France, Germany or the UK].” For this reason, Brussels proved to be a bad choice for a home base, as would have any other country with a small home market.

Capital: According to several of its former executives, Easdaq was substantially undercapitalized. Stanislas Yassukovich indicates that the need for cash was consistently underestimated, and that operating capital was always a problem. According to Axel Haelterman, the lawyer who drafted Easdaq’s original legal framework, Easdaq was an exceedingly low-budget startup. He indicates that they couldn’t afford to hire a quality, international legal team. The problem was worsened by the fact that Easdaq’s costs were consistently growing, while revenues were entirely dependent on the number of listings, which always fell short of estimates. As a result, there were insufficient funds to properly market Easdaq on a pan-European level.

Listing Requirements and Regulations: Easdaq had what was perceived to be a complicated rule book, designed as a hybrid between the US and UK regulations, but closer to the US style. Additionally, Easdaq was intended to have stricter guidelines because information is more important in evaluating a tech growth stock, as opposed to a company’s previous history, which is a better indicator of future performance for the larger blue-chips. Thus, to provide investors with sufficient information to draw their interest, Easdaq had stricter guidelines regarding the disclosure of principle holdings, quarterly reporting etc.

As a result, the process of getting a company listed at Easdaq was perceived to be expensive and aggravating relative to other markets, and may have influenced some companies that were in a rush to get listed, or short of capital, to opt for the local market. This problem was amplified by the local investment banks that were fighting to keep a competitive advantage over the onslaught of foreign newcomers—Robertson-Stephens, Alex Brown, etc.—by leveraging their connections to the local exchanges to push a faster and cheaper listing process. According to Kim Bøttkjær, Managing Director of Carnegie Bank in Copenhagen, he couldn’t get his clients’ prospectuses turned around quickly enough at Easdaq. “When we dealt with the Copenhagen exchange, we knew everybody and could get things done quickly,” he says. Carnegie considered Easdaq twice, but ultimately never took either company to list there. The net result was far fewer listings on Easdaq than originally anticipated.

Once listed on Easdaq, however, complying with regulations was generally easier than on other exchanges, and thus the ongoing costs were less. This, combined with the perception that Easdaq was a stepping stone to Nasdaq,
counterbalanced the hassles of the initial listing for many companies, and drove early listings.

Further, Easdaq regulations permitted all issued shares to be registered for sale at the time of the IPO. This feature was an appeasement to entice companies to list, as liquidity would be immediate. However, when the bubble collapsed, VCs and shareholders alike dumped their shares as quickly as possible. This sped up the collapse of Easdaq. On Nasdaq by contrast, only a portion of the issued shares are typically registered for sale at the IPO. This helped to prevent a faster drop on Nasdaq when the bubble collapsed.

Some of the respondents felt that the failure of Easdaq and the other new markets to implement the sponsor model, as opposed to the underwriter model, may have also undermined the quality of companies that listed. In contrast to the underwriter, who generally has few obligations after the IPO, a sponsor is obligated to make sure that any company it brings to the market is viable. London institutions follow the sponsor model, which contributes to London’s superior liquidity in Europe. Easdaq followed the US model whereby an underwriter brings companies to the market. Amidst the hype of the internet bubble and without any increased responsibilities after the IPO, underwriters in many of the new exchanges brought inferior and sometimes scandalous companies to the market. This ultimately contributed to investors’ shunning of tech stocks.

**Management/Performance:** Several of the interview candidates indicated that Easdaq suffered from weak leadership at the executive levels, and several key decisions were poorly made. This may explain the churn in executives, with three passing in a relatively short period of time. According to David Adams;

> “Easdaq suffered from bad leadership in general. Initially, they started by focusing on getting IPOs. Then when they were running out of money, they tried to convert to a trading platform. With the scandals that followed, people lost confidence in Easdaq.”

According to Paul Arlman, Secretary General of the Federation of European Securities Exchanges (FESE), Easdaq’s big mistake was to go for listed companies first, rather than intermediaries. The early management at Easdaq generally held that if they were successful in attracting sufficient listings, the intermediaries would follow. Arlman’s perspective is that the intermediaries should have been wooed first, and with them would have followed listings. This point was echoed by Andrew Beeson, formerly of Beeson Gregory in London, who indicated that Easdaq never acquired a critical mass of institutional investors.

Perhaps one of the worst management decisions was to choose Intersettle as Easdaq’s back-end system. Intersettle has been derided by many of the interviewees as a poor choice for clearing and settlement. In addition to being a second-class system, they claim it was not well known nor easily accepted by the marketplace.

Bad management decisions continued when Easdaq was acquired by Nasdaq, which didn’t fully appreciate the importance of nationalism in Europe.
According to Paul Arlman, Nasdaq Europe made a crucial mistake in firing the majority of its non-American executives. This created a vacuum of knowledge at the executive levels of Nasdaq Europe with respect to the cultural nuances of various European markets.
Europe’s Underperformance in Technology: Analysis of the Core Problem

Europe’s Underperformance in Technology

As the interview process progressed, a central theme emerged. Of the nearly 80 people interviewed, every single one was in agreement on one issue: that Europe (as a whole) underperforms in the creation of technology powerhouses. When measured against the US, this hypothesis is all but irrefutable. During the last 30 years, the US has vastly outperformed Europe in producing global technology companies with market caps of $500 million or greater. According to Lester Thurow, a prominent MIT economist, of the world’s 25 largest companies in 2000, 6 were US companies that were founded after 1960, including Microsoft and Intel. None were European companies. Household names from the US such as Microsoft, Intel, Cisco, EBay, Yahoo, and Dell are all too familiar. In Europe however, finding a household name beyond SAP is more difficult.* In the Forbes 2004 ranking of top software and services companies, only 2—SAP and Cap Gemini—were European, while 16 were from the US. With one of the most highly educated populations on the planet, especially in science and technology, and highly evolved democratic and capital infrastructures, all agree that Europe should be able to produce more technology companies that compete at the global level.

While the issue of underperformance seems to be a foregone conclusion, the underlying cause and what to do about it are issues of far greater controversy. In the context of evaluating the need and potential for a dedicated technology growth market, it is important to determine where its absence ranks as a cause for Europe’s underperformance in technology, or if it is a symptom rather than a cause. The

Europe’s underperformance in producing technology powerhouse companies is due to:

- Cultural (market) fragmentation
- Capital market fragmentation
- VC funds spread too thin
- Socialism/other social factors
- Starvation at both ends of the growth spectrum

* During interviews, many Scandinavians were quick to claim that underperformance in technology is not their problem, and point with pride to Nokia and Ericsson. In a recent report by Morgan Stanley Capital International (MSCI), the market cap for the Nordic Countries Index in information technology accounted for 49.6% of the total European market cap in IT ($112B vs. $226B), even though the total market cap for the Nordic Countries Index is only about 7% of the total European market cap ($347B vs. $5,174B). With combined population of only 24 million—about 4% of the total population of the EU—this is indeed impressive performance in technology by the Nordics. However, the report includes Nokia and Ericsson, with a combined market cap of about $110B, under the category of information technology. While Nokia and Ericsson are indeed global successes to be proud of, both are well older than 100 years. If these two companies are removed from the IT category, the Nordic share of the European IT market cap drops to less than 1%. Thus, the Nordic countries suffer as much as, if not more than, the rest of Europe from underperformance in creating technology companies.
following section will outline the major causes for Europe’s underperformance in producing technology powerhouses, including nationalism and the resulting cultural and capital market fragmentation, Europe’s apparent risk aversion and socialistic tendencies, and the European venture capital communities’ practice of funding too many startups with investments that are too small.

**NATIONALISM**

When evaluating the performance of the European technology sector, especially in comparison to the US, the importance of nationalism—as with the downfall of the new exchanges described previously—cannot be overstated. Europe is a collection of 40 countries, with diverse cultures, speaking dozens of different languages. With a population of just over 290 million, the US, by contrast, is an enormous market united by one language, and a single federal government. Germany, which is Europe’s largest economy, at $2.27 trillion* is only about one-fourth the size of the US.

The European Union, which includes 25 member nations and nearly 500 million people, is a giant step towards unity and harmony within Europe. But Europeans still identify with their national origin above their status as Europeans. While this preserves Europe’s cultural richness, it also hinders Europe’s ability to achieve greater efficiencies through collaboration and cooperation. From the market perspective, this nationalism presents challenges at many levels: cultural (market) fragmentation, capital market fragmentation, pan-European regulation, and a host of other cultural factors.

**CULTURAL (MARKET) FRAGMENTATION**

A technology company in the US immediately faces a huge market all speaking one language (notwithstanding the Latino populations in Miami and Southern California) and a GDP of about $11 trillion. Although American culture varies substantially between the various demographic groups—Latinos, African Americans, Southerners, Yankees, etc.—these groups share more commonalities than differences.

The same cannot be said for Europe. Although the European Union now is home to nearly 500 million inhabitants, the cultural differences among them are far more pronounced. A business model that works in one country may not work in another. For example, while Starbucks has enjoyed widespread penetration in the UK, it is not nearly so palatable to the Italians, who are very particular about their coffee. Consequently, from the perspective of a small company, there is no single “European market,” it is a mosaic of individual markets, each with nuances that demand an individual approach. This fact makes growing a European technology company (or any European company, for that matter) to the level of a global competitor more difficult than in the US.

*From the CIA World Factbook: http://www.cia.gov
An entrepreneur in the Netherlands, for example, has a domestic market of only about 16 million people. If she wants her company to ever grow beyond the Dutch market, she will likely need to speak German and French, and understand the buying patterns of Germans and the French. Differences in tax codes and other regulations further complicate the situation, not to mention the nationalistic response of the marketplace that may choose a familiar local company over hers. The inevitable asymmetries in market familiarity will put her at a disadvantage when competing in Germany or France. This market fragmentation creates a barrier to growth, and increases the likelihood that her company will stumble if she ever attempts to grow it beyond the local market.

The cultural fragmentation also affects another market: the market for finding employees and entrepreneurs. In the US, an enormous amount of entrepreneurs and a breadth of technical talent are amassed in Silicon Valley and Boston. By contrast, with the exception of a few local centers of lesser size such as Cambridge, England, Switzerland and Stockholm, Europe’s talent is more dispersed. This problem is compounded by the preference of Europeans to live in their home country, whereas the US workforce is generally more mobile. For instance, an engineer from Georgia Tech will very likely be amenable to moving to Silicon Valley for the right job opportunity. Thus, the entrepreneur in the Netherlands may also find it challenging to hire a specialized skill when needed, if that specialized talent is from another country.

**CAPITAL MARKET FRAGMENTATION**

Nationalism is also the driving force behind the fragmentation of Europe’s capital markets themselves. Having a national exchange, like having a national airline, is a source of national pride. It is easy for local governments to drum up support for the creation and maintenance of a local exchange, even if it requires social welfare to keep it alive. As a result, Europe is currently home to over 30 exchanges.

Among those 30+ exchanges, a recent Grant Thornton report (2004) identified 21 “new markets” in Europe (see Appendix B). In this report, a new market is defined as one that caters to small, young, technology-focused companies with growth potential. According to the report, these 21 exchanges share of a pool of about 1400 listed companies. However, of these 21 exchanges, four did not have a single listed company at the start of 2004. Only five had 40 or more listed companies. Of those, only one, Italy’s Nuovo Mercato, had an average market cap per company greater than $100 million. Most will recognize this as an unsustainable situation where the supply of exchanges far outstrips the demand from investors and listed companies.

In addition to being unsustainable, the fragmentation of the capital markets reduces the liquidity for listed companies. There are three primary reasons why this is true: a) local regulators prohibit a foreign company from participating on a local exchange, b) different exchanges don’t offer the same degree of trust and confidence to investors, c) there are big differences in transaction costs between exchanges. The more fragmented the market, the more likely that liquidity will
be diminished on any one market. Further, the fragmentation also reduces economies of scale for a given exchange, resulting in higher transaction costs across all the exchanges.

In the US, by contrast, there are effectively two exchanges, Nasdaq and NYSE, with seven regional exchanges that maintain liquidity and volume through dual listings and linkage with one of the two larger exchanges. Nasdaq alone has over 3000 companies listed, with an average market cap per company of $900 million. Thus, there is a much greater concentration of capital, liquidity and financial expertise for US tech companies. It stands to reason that the concentration of capital, expertise and attention leads to increased liquidity on the US exchanges, while Europe’s fragmentation results in poor to non-existent liquidity.

In addition to reduced liquidity, the capital market fragmentation and resulting absence of a dedicated, pan-European market has several other negative effects that diminish Europe’s ability to produce globally competitive technology companies. It contributes to reduced M&A valuations, and encourages the flight of Europe’s best entrepreneurs, engineers and technology to the US, where the rewards are greater.

**Depressed M&A Valuations**

As with the US, only the best VC-backed companies can exit via IPO: the rest will exit via M&A and trade sales. According to Mark Hawkesworth, Senior Partner at Bearing Private Equity Partners in London, the lack of an efficient IPO market reduces the overall valuations realized via M&A/trade sales.

To better understand how IPOs and M&A valuations are related, consider the process by which an M&A deal is valued. Private equity investments are usually managed by a fund’s general partner (GP). When evaluating a potential acquisition, the GP will forecast the company’s value at a future date, and then discount appropriately with a risk-adjusted rate of return. The value is usually based on some multiple of EBITDA or cash flow at a projected exit date. These exit multiples are based on comparable transactions in the IPO or M&A markets. Consequently, if the IPO market for technology growth companies is weak (or in Europe’s case, nonexistent), then offer prices within the M&A market will naturally be lower. As indicated by Haelterman, “the opportunity to put a company up for sale without having to bargain is critical—this can only happen through an IPO.”

To see how dramatic the effects of the IPO market are on M&A valuations, consider the effects Nasdaq has had on M&A valuations in the US. The Nasdaq composite is the best source of comparables for M&A valuations because most VC and PE exits (in the US) trade on Nasdaq. From 1995 through 2000, the gains experienced on Nasdaq created a surge in M&A valuations. Likewise, after the bubble burst, M&A valuations plummeted. When viewed graphically, the relationship is unmistakable.
According to Allen Hahn, Senior Vice President and Neil Kelly, Chairman of Valuation Research Corporation;

“A key reason for the decline of private company valuations is limited exit opportunities [via IPO].” [Hahn, A., Kelly, N 2004]

Thus, the inability to achieve exits via IPO affects the VC and PE communities at all levels. In the words of Hawkesworth, there currently exists a state of “financial constipation” whereby much money has been invested, but opportunities for exit are constrained. The lack of exits subsequently makes it more difficult for European VCs to raise new funds, as they can’t show adequate returns on previous funds.

**FLIGHT OF EUROPE'S BEST**

In addition to depressing the valuations that VCs can achieve on their exits, the lack of a well-functioning market for tech IPOs is pushing Europe’s best technology companies to the US—and many of Europe’s best entrepreneurs and scientists along with them. Ann Mettler, in a recent article in the Financial Times, indicates that Europe has lost some 400,000 scientists now working in the US where, she claims, innovation is better rewarded.

Many of the VCs interviewed indicated that they plan from the start to take their best portfolio companies to Nasdaq. According to Paul Schroder of Residex in Holland, there also is a growing trend for US VCs to syndicate with European VCs and invest in European technology companies because prices are so low. The best ones are then brought back to the US to list. Schroder is bothered by the phenomenon:
“In the last three months, three of our [Residex’s] companies have gone public on Nasdaq. We are losing our best companies to the US!”

Currently, there are 85 European companies listed on Nasdaq, with an average market cap of about $520 million#. Undoubtedly some of these companies are blue chips, and some have dual listings with European exchanges. Nonetheless, the statistic lends credence to Schroder’s fears given that the 1300+ companies listed on Europe’s “new” exchanges have an average market cap of only $61 million†. Clearly, there is a draw for the best European tech companies to go to Nasdaq. Given the importance of technology in providing new jobs and improving productivity, the long-term effects of pushing European tech to the US could be devastating.

**UNDERPERFORMANCE IN THE EUROPEAN VC COMMUNITY**

In addition to the various cultural issues and the fragmentation of the capital markets, the current practices of Europe’s VC community appear to be making a significant contribution to the woes of Europe’s technology entrepreneurs. To gauge Europe’s performance in producing global technology companies, the trends of the European VC community‡ can be compared with those of the US VC community.§

Although the US invested nearly twice as much in VC as did Europe in 2003—$18.4 billion vs. $9.97 billion—Europe’s gross VC investment was roughly equivalent to the that of the US in 1996. From this perspective, Europe is less than a decade behind the US, which is not a particularly alarming statistic in and of itself. However, when examining the number of companies that receive investment, the number of investments made, and the average investment size, there are far more important differences between the US and Europe.

The European VC community spread its $9.97 billion investment across

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# Source: Nasdaq website as of 21 July 2004.
† The average market cap on the new exchanges is derived by dividing the total market cap on 31/12/03 by the total number of listed companies on the same date.
‡ Data on European VC investments comes from the EVCA 2004 Yearbook, where VC is defined to include seed, start-up, and expansion stages.
§ Data on US VC investments comes from the 2004 PricewaterhouseCoopers/Thomson Venture Economics/National Venture Capital Association MoneyTree Survey. In this survey, VC is defined to include seed, start-up, expansion and later-stage stages.
6,355 portfolio companies via 8,399 investments. The average investment size was $0.521 million at the seed stage, $0.728 million at the start-up stage, and $1.55 million at the expansion stage. The average investment overall was $1.19 million.

By comparison, the US VC community invested $18.4 billion in 2,715 portfolio companies via 2,808 investments. The average investment size was $2.06 million at the seed stage, $4.57 million at the start-up stage, and $7.80 million at the expansion and later-stage stages. The average investment overall was $6.57 million (See Appendix D).

The contrast in investment patterns is equally stark if we compare the number of seed investments made in the US and Europe. European VCs made 377 seed investments with an average of just over $500 thousand each. The US made only 181 seed investments, but with an average of more than $2 million each.

Thus, if a US VC-backed company were competing against a European VC-backed company in the same marketplace, the US company would have on average over five times the amount of investment capital based on the 2003 investment profile. No doubt, the US company would have a tremendous advantage in the marketplace and stand a much better chance of acquiring the necessary momentum to reach an IPO.

A picture emerges that European technology companies are under-funded at all stages of VC funding—seed through expansion—relative to their US counterparts. The statistics show that the European VC community invests its money in too many companies and, consequently, the investments are, on average, too small. It suggests that the current practices of the European VC community contribute to an overly competitive environment where too many companies have too little capital. This is accurately reflected by Ann Glover, CEO of Amadeus Capital Partners in London, who says that “the real problem is that Europe doesn’t concentrate capital—it is spread too thin.” Combined with the absence of a well-functioning growth market for tech IPOs, it is not surprising

* For the purpose of simplification, the US expansion and later-stage stages are combined, and assumed to be the equivalent of the European expansion stage.
that so few European technology companies grow to valuations larger than $500 million.

Given that recognition of the problem is the first step towards recovery, it is encouraging that many of the interviewees from the VC community were quick to acknowledge the immaturity of their own industry. According to Mark Evans of Benchmark Capital in London, the root of Europe’s underperformance in producing technology companies lies squarely in the lack of maturity in Europe’s VC community. He claims that the European VC industry attracts investment bankers rather than ex-entrepreneurs with concrete operational experience.

Further, Evans claims that the VC community in Europe is too risk averse. “The VCs in the US think about operations and big markets, while in Europe they think about science and the home market,” he says. The perception of risk aversion is supported by the data, which suggests that the European VC tries to diversify risk by spreading smaller investments across a larger number of companies.

This phenomenon is probably also in part a reflection of Europe’s cultural fragmentation: European VCs are not comfortable with cross-border investments in companies from a different culture, speaking a different language. The 2004 EVCA Yearbook supports this with the data on European VC/PE syndication: 64%—nearly two-thirds—of all investments (by amount invested) involved no syndication. Only 18.1% involved transnational syndication.

Ann Glover reflects Evans’ comments regarding immaturity: “Europe’s problem is not with the markets, it is the inability to build great companies.” She goes on to state that “the lack of access to public capital is a symptom, not the root cause of the problem.”

According to many, the European VC industry, which didn’t get its start until the 1970’s [Pellón, 2001], simply hasn’t been around long enough to acquire sufficient competence in building great companies. This lack of experience extends beyond investment patterns and into general management and promotion of startup companies. With a shorter history, Europe lacks visible successes to follow and a stable of experienced entrepreneurial managers to draw on. Uto Baader of Baader Wertpapierhandelsbank points to Europe’s inability to properly market emerging technology companies as the source for underperformance;
“The US is much better at marketing—this is why their tech companies do so much better.”

By contrast, the roots of the VC community in the US originated in 1946 when a group of wealthy investors in Boston backed High Voltage Engineering Corporation, a radar company out of MIT [Newitz, 2001]. According to Evans, the VCs in the US have far more experience and a proven formula for building successful technology companies. The long history has also enabled the accumulation of a pool of experienced technology executives. New talent is continuously inspired by the very visible successes in the US.

OTHER CULTURAL FACTORS

Interviewers referenced several other cultural factors with significant frequency to warrant consideration. Most notable were Europe’s inclination towards socialism, intolerance of failure, and lack of entrepreneurship.

Europe’s tendency towards socialism and heavy government support of social welfare were vehemently derided by some as the primary barrier to technology entrepreneurship in Europe. Tim Linacre, CEO of Lazard Capital Management in London, is disparaging Europe’s socialistic tendencies. He recalls his experience as President of a small investment bank, where his employees would always retire at 5 PM for the day—a practice unheard of in the investment banking industry in the US. Tim has grave concerns about Europe’s current path:

“Europe will eventually be a giant theme park, like a glorified Venice, for the wealthy tourists of the US and Asia.”

According to Clause-Urban Dackberg, Acting Head of Products & Markets at the Stockholmsbörsen, the tax structures in Scandinavia create a “negative incentive to do a high-risk company because of the tax debt.” This, he claims, is the root cause why many technologies that are borne in Scandinavia are developed in the US.

According to many participants, Europeans have an unhealthy attitude towards failure. A bankrupt company leaves a black mark next to the name of its management team. With laws in Germany that restrict the levels of authority attainable by executives who were involved in bankruptcies of publicly traded companies, there appears to be some truth to this claim. For this reason, Dirk Boogmans, CEO of GIMV in Antwerp, states that “professional management is much more reticent to participate in startups because of the perception of failure.” Although this evidence is anecdotal and difficult to confirm empirically, it would suggest that the cultural intolerance of failure is a deterrent to entrepreneurship.

By comparison, failure in the US is perceived as “experience.” There are no regulations that prohibit an executive of a bankrupt company from running
another company, and it is commonly believed that VCs actually prefer to back an entrepreneur who has failed once before and has learned from the experience.

Many of the interviewees believe that Europe lacks an entrepreneurial culture, especially at the university level, and thus fails to capitalize on the science and technology expertise within Europe. According to Phillipe Huysmans, formerly with Alpine Investments in Holland, and Bert Twaalfthoven, Chairman of Indivers BV in Holland, Europe lacks a well defined pathway from the universities to successful entrepreneurship. Huysmans claims that “most students see the ultimate goal as working for a large company.” It was also noted that Europe lacks examples of bigger-than-life entrepreneurs. While the US can look up to the likes of Bill Gates, Michael Dell, Steve Jobs and Larry Ellison and a host of others, Europeans struggle to find a name beyond Richard Branson. The result is that few Europeans at the university level aspire to start a company and take it public, or even believe that it is possible.

The frequency with which these cultural factors were mentioned, and the emphasis that was placed on them, is an indication that there is more than just a kernel of truth behind them. The conclusion to be drawn from this is that Europe doesn’t produce and fund enough entrepreneurs and ideas. However, as pointed out by Herman Daems of EVCA, such claims about the lack of entrepreneurship are difficult to test empirically. As such, he feels their importance is dubious at best.

More importantly, however, European VCs made 377 seed investments in 2003, while the US made only 181 seed investments. Although the data says nothing about the relative quality of entrepreneurs and ideas, the evidence does not point to a lack thereof. On the contrary, the European VC community is funding too many entrepreneurs! Given the cultural, legislative and capital-market fragmentation faced by European entrepreneurs, it would stand to reason that Europe as a whole can support fewer powerhouse technology companies, not more. The two-fold increase in companies funded in Europe over the US suggests that there is, in fact, a sufficient supply of entrepreneurs and ideas in Europe. Further, European entrepreneurs face an overly competitive marketplace at the VC level. It also supports Herman Daems’ rebuttal of these social and cultural factors, and suggests that they are secondary to the other factors identified above.

**PAN-EUROPEAN REGULATION**

Europe currently lacks a single regulatory body equivalent to the SEC, with authority and governance over all listed securities. The absence of such a regulatory body has been identified by some as not only a roadblock to the creation of a pan-European exchange, but the source of significant inefficiencies within the existing exchanges.

Without a single authoritative entity, each country maintains its own standards of security regulation. The lack of regulatory conformity complicates the process of bringing a company to the international markets because it requires an understanding of the different
regulations in each country. Further, each road show leading up to the IPO requires special preparation for each country. All of this serves to increase both the time and cost to bring a company to market.

Diversity in regulation also serves to undermine investor confidence. Because investors in one country don’t know or understand the regulations of another country, they have less confidence that companies in the foreign country are properly regulated. The centuries-old distrust that has accumulated between some European nations, as a result of historical conflicts, is only exacerbated by the lack of consistent regulation. Thus, the lack of pan-European regulation becomes a significant deterrent to cross-border investment, further fragmenting the capital markets and reducing their liquidity.

The lack of a single regulatory body also enables local regulators to maintain protectionist practices. Within the ecosystem of an exchange, the closer relationship between intermediaries and listed companies enables them to pressure local regulators to keep out competition. Thus, when a foreign company comes to the local market for listing, local regulation can be applied with asymmetric knowledge, making it even more difficult and costly for the newcomer to gain access.

Given that several prominent countries in the EU haven’t even adopted the Euro, it is a understatement—to say the least—that getting all member nations to agree on the rules and geographic location for a pan-European SEC, much less submit to its authority, would be difficult. Indeed, with cultural and legislative fragmentation alive and well in Europe, the notion of a pan-European SEC seems like a distant dream, at best. As such, the best attitude in the short term is to set it aside, and focus on more practical solutions to the problem of legislative harmonization.

While some argue that a pan-European SEC is so impractical as to warrant its dismissal, there is evidence that it may not even be in the best interest of European exchanges. Paul Arlman points out that such an organization would put resources that should be close to the market further away. He also points out CESR is moving towards a board of national regulators with real powers, but these regulators will maintain a finger on the pulse of the local exchanges—a model that he believes is better than a true pan-European SEC.
The Case for a Dedicated Technology Growth Market

IS THERE A NEED?
As in the early 90's, the most vocal (though by no means unanimous) support for the creation of a dedicated technology growth exchange emanates from the venture capital and private equity communities. For those that advocate a dedicated market, the source of their discontent is the difficulty in exiting their investments with an adequate return. From their perspective, the absence of a healthy IPO market has a negative effect at several levels. The first and most obvious effect is that VC and PE backed companies are unable to exit via an IPO, where valuations are traditionally greatest. This is confirmed by the percentage of total VC and PE divestment via IPOs in 2003, which was a mere 8.3% of total divestments [EVCA Yearbook 2004].

It is unrealistic to expect, however, that a dedicated market can survive solely to serve the needs of the VC and PE communities—especially when they are largely divided on the form it should take (more on this later). To better understand the need for a dedicated market and what role the lack of a market plays in Europe's underperformance in producing technology companies, it is necessary to explore the mechanisms by which its absence affects the community as a whole, as well as the benefits that a dedicated market would have over simply leveraging the existing main markets in Europe.

STARVATION AT BOTH ENDS
The net effect of the absence of a well-functioning IPO market for technology companies, combined with the VC community's practice of funding too many companies and spreading their investments too thin, is that Europe's technology companies are starved for cash at both ends of the technology capital pipeline. At the beginning of the capital pipeline—seed through expansion funding—they are not receiving enough funding to gather momentum to ever grow to a size that would support an IPO. Further, too many receive funding, and thus they all face an overly competitive landscape.

At the other end of the pipeline, those few VC-backed companies that do make it to the doorstep of global expansion find it exceedingly difficult to raise large
amounts of capital from the public markets. This is the direct result of the absence of a dedicated market for tech growth stocks. In the middle, without the potential for a healthy valuation via IPO, negotiated exits via M&A transactions have depressed valuations. Consequently, Europe’s best entrepreneurs, engineers and technology are drawn away from Europe to the US where the possible rewards are greater.

In this scenario, everyone loses: the entrepreneur, the investor, and Europe as a whole. It is in this context that the need for a well functioning market dedicated to Europe’s technology growth stocks becomes apparent as the only way to alleviate the starvation faced by tech companies that are ready to compete at the global level. A pan-European market dedicated to tech growth stocks would have three crucial benefits. First, it would greatly improve the ability of Europe’s best VC-backed companies to raise the large sums of capital required to compete globally. Second, by virtue of the process by which M&A transactions are evaluated, it would increase the average valuations. Third, it would help to retain Europe’s best entrepreneurs, scientists and technology by providing a pathway for them to be rewarded at a level commensurate with that of the US.

**SPECIAL NEEDS OF SMALL- AND MID-CAP STOCKS**

Could the best tech companies raise adequate capital on Europe’s main markets? For some of the interview respondents the answer to this question is a resounding ‘yes,’ and they point to successes such as Scotland’s Wolfson Microelectronics, currently trading some 33 percent above its October 2003 issue. However, a successful tech IPO, followed by sustained liquidity, is an exception rather than a rule. To get a deeper understanding of why a dedicated market is needed, it is necessary to analyze the unique needs of small, VC-backed tech companies and the nature of Europe’s capital markets.
Europe’s capital markets have evolved to very efficiently serve the large-cap listings that thrive so well in them. These markets have developed intermediaries and expertise to create attention and liquidity for Europe’s blue-chip companies. Their focus on the large-cap asset class, however, has led to a neglect of the needs of small- and mid-cap stocks.

Small- and mid-caps, and in particular small-cap technology companies, are in volatile industries, have higher equity to debt ratios, and have higher bankruptcy rates. Further, the innovative nature of technology, and the rapid pace at which it evolves, makes tech growth companies inherently difficult to compare when valuing potential investments. In the event of bankruptcy, their assets are often intangible and not easily re-deployed. Thus, because of the peculiarities and high-risk of this asset class, it requires a higher level of analysis and marketing from intermediaries to draw a sufficient pool of investors, and to provide liquidity.

The high cost of delivering specialized analysis and marketing of the high-tech sector, however, is cost-prohibitive unless there is a critical mass of companies over which the cost can be spread. In the absence of a dedicated market, these companies are spread across the 30+ exchanges in Europe, thus dissipating any economic incentives for the intermediaries. Lost among the blue-chips, Europe’s tech companies will struggle to ever achieve the success observed in the US, where Nasdaq has amassed an ecosystem for technology growth companies that dwarfs many of Europe’s main exchanges.

It stands to reason that a dedicated exchange in Europe could amass enough companies to make research economically viable for the investment banking community. According to Alec Green, Managing Director for SG Cowen in London;

“*The investment banking community didn’t want to participate in market making [on Easdaq] because they couldn’t make money at it. There were too few stocks, so they couldn’t spread the cost and the risk.*”

By the close of 1999, however, there were over 350 companies listed across Easdaq and the various exchanges comprising the EuroNM. If they were all listed on Easdaq, or one of the other exchanges, it might have had enough critical mass to draw participation from investment banks and survive the collapse. One might conclude from this that Europe can produce only enough tech companies to support one—at most two—dedicated markets.

In addition to making research and marketing economically viable, a dedicated exchange would also deliver a critical mass of companies in one location for investors to make reasonable comparisons. Combined with increased analyst coverage, the ability to make reasonable comparisons would reduce the information gap, and thus risk, and encourage increased investor participation and liquidity.
SUPPLY OF TECHNOLOGY GROWTH COMPANIES

However, regardless of the benefits of a dedicated exchange for high-tech growth companies, it can only survive if there is a sufficient supply of quality technology companies capable and willing to list on the exchange and a sufficient demand from investors for these securities. While these conditions are not sufficient for the survival of the exchange, they are necessary. In the absence of either, a dedicated market is unsustainable. The following sections will examine whether Europe can supply a sufficient supply of technology companies to the marketplace, and whether investor interest will be there to support them.

For many of the interview respondents, the total number of companies listed on the growth exchanges of the mid 90’s is evidence that there is, in fact, an adequate supply of technology companies in Europe. By the end of 2000, the member exchanges of EuroNM alone had a combined 567 listings and had raised over €40 billion [Bottazzi, Da Rin, 2002], more than enough to support a single, well functioning exchange.

However, as Didier Duhem, President of EuropeOffering and a former board member of EASD points out, the widespread failure of these growth markets, and the companies they listed, negates their initial success as evidence for a substantial supply of European tech companies:

“All of the national markets were failures. Most of the companies that listed on these markets failed. In a different environment, Easdaq couldn’t even have been launched. It was only able to get off the ground because the market [amidst all the hype] supported such a large number of sub-par companies.”

Thus, to better determine whether Europe possesses a sufficient supply of technology growth companies to support a dedicated market, it is necessary to look elsewhere. Given the importance that VC plays in supplying technology growth companies to the public markets, it is possible to analyze how an improvement in the investment practices of the European VC community could increase the yield of VC-backed companies that are suitable for a public listing. Starting with the assumption that there is not a shortage of entrepreneurs or technology (as demonstrated earlier), it is possible to make a very rough estimate of how many IPOs could be yielded from Europe’s total investment for 2003, if that investment were managed more closely to the US standard.

If European VCs were to increase their average investment to match that of the US in 2003, then their combined fund of $9.97 billion would have been spread across only 1,468 companies and 1,519 investments, instead of 6,355 companies and 8,399 investments. The average investment would be $6.6 million rather than $1.2 million, and the average seed investment would be $2,062 million rather than $521,000. With more money and fewer competitors, these companies would undoubtedly have far better odds of surviving through the expansion stage, and the VC community would likely see much greater returns on investment. The question still remains however: would this supply enough companies to support a dedicated market for technology growth companies?
From 1995 to 2003, the US VC community made 26,386 investments totaling $262.75 billion. During the same period, there were 1,065 VC-backed IPOs. This equates to 0.04 IPOs per investment, or 4.05 IPOs per $1 billion invested. If the European VC community were to achieve similar results by adopting similar investment patterns, then the $9.97 billion invested in 2003 could eventually yield as many as 40 IPOs.

<table>
<thead>
<tr>
<th>Year</th>
<th># of VC-Backed IPOs in the US*</th>
<th># of Investments*</th>
<th>$ Invested (x 1B)</th>
<th>$/Investment (x 1m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>143</td>
<td>1,319</td>
<td>$ 6.85</td>
<td>$ 5.19</td>
</tr>
<tr>
<td>1996</td>
<td>216</td>
<td>1,901</td>
<td>$ 9.95</td>
<td>$ 5.23</td>
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<tr>
<td>1997</td>
<td>121</td>
<td>2,191</td>
<td>$ 13.09</td>
<td>$ 5.97</td>
</tr>
<tr>
<td>1998</td>
<td>68</td>
<td>2,504</td>
<td>$ 17.71</td>
<td>$ 7.07</td>
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<tr>
<td>1999</td>
<td>248</td>
<td>4,472</td>
<td>$ 48.96</td>
<td>$ 10.95</td>
</tr>
<tr>
<td>2000</td>
<td>200</td>
<td>6,101</td>
<td>$ 93.75</td>
<td>$ 15.37</td>
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<td>$ 34.57</td>
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<td>$ 19.43</td>
<td>$ 9.45</td>
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<tr>
<td>2003*</td>
<td>29</td>
<td>2,808</td>
<td>$ 18.44</td>
<td>$ 6.57</td>
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<tr>
<td>Totals</td>
<td>1,065</td>
<td>26,386</td>
<td>$ 262.75</td>
<td>$ 9.96</td>
</tr>
</tbody>
</table>

Even if this number were discounted by 50% to account for the effects of cultural fragmentation, the European class of 2003 could still produce 20 IPOs. If this performance were sustained year after year, Europe would indeed have a sufficient supply of technology growth companies to support a dedicated market.

If the preceding argument isn’t compelling enough, consider the following: if the 1400 companies that are currently spread across 21 exchanges were aggregated on one single exchange that had both pan-European exposure and penetration in the local markets, it would be approximately half the size of Nasdaq in terms of the number of listings. Undoubtedly, some of these companies would not survive in an aggregated environment due to their smaller market cap, but those that did would just as surely receive greater focus and liquidity. Their success would likely attract more listings and more attention from intermediaries and investors, leading to an upward spiral of success.

**DEMAND FOR TECHNOLOGY GROWTH SECURITIES**

Adequate supply of technology companies, however, is only half the equation. A dedicated exchange can only survive if there is sufficient demand from investors. Experience with Nasdaq has shown that both

††† Again, it is important to note that this analysis does not examine the relative quality of European technology and entrepreneurs as compared with the US.

‡‡‡ Source: VentureOne

§§§ Source for 2003 data: Thomson Venture Economics

**Investor demand for technology growth stocks is clearly lacking. However, European investors are not fundamentally different than anyone else. If this asset class performed better, there is no reason to believe that investor interest wouldn’t improve as well, just as it did in the late 90s.**
Institutional and retail demand contribute to the liquidity of an exchange. Thus, to gauge the viability of a dedicated market for technology growth companies, it is necessary to assess the current and future demand for technology growth securities.

Nearly all of the interview participants stated that investor demand for technology growth companies is at best only just improving, and at worst, non-existent. Not surprisingly, most indicated that the market still suffers from the trauma of the dot.com collapse. Many respondents believe that confidence in high-tech is returning in some places, most notably London, but is completely absent in other areas of Europe—for example, Germany. According to René Avonts, Managing Director of Quest Management in Belgium:

"The Neuer Markt had an enormous impact on investor sentiments—now no one wants to invest in technology. Consequently there have been virtually no tech IPOs in Germany for several years."

According to Mark Evans, however, not only is investor interest in technology negligible, it isn’t going to return any time soon. Evans claims that the vast majority of buyers, either equity or corporate, are still American. He believes that there is no investor demand for high-tech in Europe as a matter of culture, and thus no need for a dedicated marketplace. Nonetheless, he acknowledges that there would be more investors interested in technology if there were more successful technology companies, but he also points to the circular nature of the problem: he believes there won’t be more companies until investor demand picks up.

Recent data from Morningstar confirms the lack of demand in both small cap and technology securities, at least in the short term. In a recent survey of 63 European fund managers (May 2004), the majority of respondents indicated that large-cap investments will outperform small cap investments. In the same survey, only 11% of the respondents predicted software to perform best over the next 12 months, and 0% predicted hardware as the best performer.
Feasibility Study: A Pan-European Market for Tech. Growth Companies

What stockmarket sectors do you think will perform best/worst in the next 12 months?

According to Mark Hawkesworth, however, there is a class of institution that is looking to invest in alternative, high-growth securities because of poor performance on the traditional markets. The success of AIM is evidence that he is correct and shows that, at least in London, small-cap companies can find liquidity. Of Europe’s 21 “new” exchanges that support small-cap, growth stocks, AIM is by far the biggest. As of Jan 1, 2004, it boasted 754 of the total 1,344 exchanges listed on these new exchanges—more than 50%. At $32.7 billion, AIM’s market cap accounted for 40% of the combined “new market” market cap of $81.4 billion (See Appendix B).

However, only 14 listings out of 845 (as of June 30, 2004)**** on AIM, are from other European countries outside the UK, and 10 of those are from Ireland. Further, most of AIM’s investor base comes from London and the UK. Thus, AIM offers no indication that the demand for high-growth securities is pan-European.

Perhaps a better measure of Europe’s appetite for technology growth stocks are the roughly 1,400 companies currently listed on Europe’s “new” exchanges, nearly half the total companies listed on Nasdaq, and the existence of these exchanges themselves. Again, this is not evidence of a pan-European demand, but it does show at least some regional interest in technology growth stocks.

Given that the recent collapse of the dot.com boom is still fresh in the minds of weary investors, it is not surprising that current interest in technology growth securities is less than stellar. However, the process of creating a new market segment for tech companies will not happen overnight. To gauge the viability of a dedicated market, some assessment of the demand for technology stocks in two to five years should be made.

Predicting the demand of the market, whimsical as it is, is at best a challenging task that is subject to a high degree of error. The best indication of how investors might respond to the emergence of a dedicated technology sector may be past performance and human nature. Many interview participants have cited

**** AIM statistics dated June 30 2004 taken from LSE Website:
that Europe’s retail investors, generally speaking, have less of an “equity culture” than the US. With the exception of the internet bubble, Europe’s participation in the equity markets has always been much weaker than in the US. However, this could be explained by the fact that Europe has never had all the necessary ingredients to produce appealing technology growth companies and, thus, draw investor interest.

The experience of the internet bubble did prove that European interest in equities can increase substantially if investors perceive that there are profits to be made. Consider again the recent analysis [Manigart, De Maeseneire, 2003] of the initial returns of 300 IPOs traded on both Easdaq and the EuroNM before October 1, 1999 as detailed above in ‘A Brief History.’ In just a few short years, the new markets raised a combined €10.2 billion on 300 IPOs. Such performance is an indication that if Europeans see promise in the technology sector, they will participate in the marketplace. While investor interest may be cool now, a few prominent and successful tech IPOs could rekindle that interest. If a dedicated marketplace for technology growth companies were developed that demonstrated the capacity for long-term success and sustainability, it is feasible that Europeans might acquire a greater and sustained interest in equity investments. That being said, it remains to be seen how a dedicated market would be received.

**Current Conditions**

Several notable changes have occurred since the mid 90s that have altered the landscape for the potential of creating a dedicated market for technology companies. Many of the changes bode well for a renewed effort to create a new market, including the widespread adoption of the Euro, better regulatory harmonization across Europe, and a shift in status of the exchanges from being member-owned to being publicly traded. Some changes, however, will make a renewed effort more difficult, including painful memories of the recent failures and a reduced demand for research.

Perhaps most notable is the widespread adoption of the Euro. The common currency greatly facilitates clearing and settlement transactions, reduces the risk incurred as a result of exchange-rate fluctuations, and creates a more level playing field across Europe. Unfortunately, several key countries have yet to adopt the Euro, including the UK and Switzerland, and the Scandinavian countries.

Although Europe still lacks a single regulatory body equivalent to the SEC, substantial progress has been made since the mid 90s towards harmonizing regulations across the EU. The Financial Service Action Plan (FSAP) was specifically designed as a framework from which to develop a single European
financial environment. By April of 2004, 38 of the 42 measures recommended by the FSAP had been adopted by the EU. In addition, five directives have been adopted that, when implemented, will greatly improve the ability to list and trade on a pan-European basis. These directives include:

- The Collateral Directive (Adopted May 2002)
- Regulation on International Accounting Standards (Adopted July 2002)
- The Pension Funds Directive (Adopted May 2003)

According to David Wright, Director General for the EC, Europe “now has basically one set of rules.” He believes that the prospectus directive will greatly facilitate the ability for tech companies to raise capital across the EU, and that the Pension Fund directive will pave the way for increased institutional (pension) participation funding VC-backed companies. In theory, these directives should also help to eliminate protectionist practices at the local level. Wright explains;

“Member states cannot impose local rules overriding the EU laws, in many cases. For example, they cannot impose local regulation on top of a maximum harmonization rule.”

It is worth noting, however, that although they have been adopted, they have yet to be implemented. Further, these directives are undoubtedly the consensus of multiple negotiations between the different member states and their national markets—as such they may prove to be watered down. For these reasons, many of the interview respondents remain skeptical of the directives’ efficacy.

Changes in the ownership structure of the exchanges themselves may improve the competitive prospects of a pan-European initiative. In the mid 90’s, the local exchanges were largely member owned. The investment banks that were members had an incentive to bring business to the local exchanges. As the only true pan-European exchange, Easdaq was at a disadvantage in the race to acquire critical mass through participation from the investment banks. The local exchanges reciprocated the patronage of the local institutions by catering to the needs of the member banks, which made it easy for the banks to get things done, as previously noted by Böttkjaer. Today however, most exchanges are publicly traded companies themselves. As such, their relationship with the investment banks has changed, and they are catering less and less to the needs of the investment banks. This may contribute to leveling the playing field for a pan-European initiative.

Further, improvements in the electronic trading platforms since the 90’s have better enabled remote membership. Accordingly, intermediaries can function in remote countries without maintaining a physical presence at the exchange. As such, European companies don’t need to be in the US to attract US investors. The reduced interdependency between the investment banks and the exchanges, and the improved remote access will facilitate any new initiatives to pull investment banks away from the local exchanges.

Not all of the changes have been positive, however. To be sure, recent memories of the spectacular collapse of the new markets of the 90s is fresh and painful in
peoples’ minds. This situation has created a backlash against technology stocks, and ensured that any new efforts to create a dedicated market will be met with extreme skepticism from many. This is especially true in Germany, as previously noted by René Avonts. Additionally, as more and more traditional companies use technology as a key differentiator and the boundaries of technology continue to grow, it has also become more difficult to define a technology company. Thus, the issue of focusing analyst attention on the technology sector is further complicated.

Market making was a core feature of Easdaq, and has worked well for Nasdaq. However, Patrick de Bellefroid, Chairman of Puilaetco in Brussels, has serious doubts about the broker-dealer model. He believes this model will be much more difficult now with recent changes in the environment pertaining to the role of researchers and analysts. He indicates that the proportion of index-linked investment is growing rapidly, which reduces the need for research. Further, subsequent to the scandals of the late 90’s, institutional investors have lost confidence in analysts, and have increasingly relied on in-house research. Thus, brokers are losing customers, and research is no longer a viable marketing tool for them. On the buy-side, brokers are under increasing pressure to find the best price for a security, and are less willing to pay for research.

Given the importance that research plays in disseminating information and drawing investors to tech stocks, the reduced demand for research will be problematic for any new initiatives to create a dedicated, pan-European market for technology growth companies. Without adequate demand, performing research will be cost prohibitive. As a result, the technology growth sector will struggle to provide sufficient information to the market, and there will be less incentive for market makers to participate, or they will require spreads that are prohibitively large. For this reason, de Bellefroid believes that any new initiatives must develop an alternative model to market making.

Perhaps the most challenging barrier today is not a new development, but the continued stranglehold that the US holds on capital markets. As noted by many of the VCs interviewed, Nasdaq is still the ultimate destination for Europe’s best VC-backed companies to find liquidity and capital. If the European VC community improves its financing of tech companies at the early stages, the best may still be drawn to Nasdaq as they mature. With such weight behind Nasdaq, it is difficult to create a significant capital market for technology elsewhere. The best companies will always be drawn to Nasdaq, thus depriving any new initiative of the big stars required to attract investors and investment banks.
ANALYSIS OF THE INTERVIEW DATA

The interviews were extremely valuable in extracting a qualitative understanding of the underlying problems behind Europe’s underperformance in technology, and shedding light on various perspectives for particular remedies. Combined with data from other sources, a compelling case can be made supporting the need for a dedicated marketplace. Apart from the analysis of whether or not there is a need, no effort to create one can succeed if it is not supported by the will of the people. To this end, the interviews provide a snapshot of who supports the concept of a dedicated marketplace, and why.

Both a qualitative and quantitative analysis of the interviews is very helpful in determining whether or not efforts to develop a dedicated exchange would be supported in the marketplace.

To support the quantitative analysis, several interview topics were handled in a consistent enough fashion to extract reasonable scientific data. Each of the interviewees was asked if he or she believes there is currently a need for an exchange dedicated to technology growth companies in Europe. Each was also asked what he or she thought was the best solution for addressing the problem, relative to the current structure of the capital markets. The results were tallied to provide a quantitative picture of the respondents’ attitude towards a dedicated marketplace for technology growth companies.

To identify any trends that may exist within a particular industry, the interviewees were divided into several subcategories depending on the industry they belonged to, or their previous relationship with Easdaq. The subcategories included:

- Former Easdaq board members and executives
- Former Easdaq issuers (companies formerly listed on Easdaq)
- Former Easdaq members (investment bankers, intermediaries)
- Representatives of the current exchanges
- Current fund managers
- Current members of the VC and PE communities
- Others

When asked if they believe there is currently a need for a dedicated exchange, 43% (34 of 79) said there was a need, while 52% (41 of 79) said there was not a need, and 5% were either uncertain or had no opinion. This would indicate that there is a significant, but not overwhelming, portion of the marketplace who feel a dedicated
exchange is needed. However, it should be noted that 12 of the 34 people who indicated that a dedicated exchange is needed also, independently and without provocation, indicated serious doubts about the viability of such a solution. Such skepticism could make it difficult to rally Europe’s leaders behind an effort to create such an exchange.

Of the various subgroups, the investment fund managers were the most supportive of a dedicated exchange, with 57% indicating that there is a need. Members of the VC and PE communities were the second most supportive, with 44% indicating that there is a need. The representatives of the 8 exchanges that were interviewed were the least supportive. Only one of the nine interviewees believed that a dedicated exchange was needed in Europe, and he was from Nasdaq!

When asked to identify a remedy, if any, to the inability of the current exchanges to provide liquidity and exits for Europe’s VC-backed tech companies, interviewee’s responses generally fell into one of six categories:

- Resurrect Easdaq, or create a new pan-European exchange
- Leverage the momentum of one of the existing exchanges
- Collaboration among two or more of the existing exchanges
- Maintain the status quo (which included those who favored the natural course of consolidation due to market pressures)
- Other
- No opinion

The most favored solution, selected by 37% (29 of 79) of the total group, was to maintain the status quo. This option was selected by those who feel that no action should be taken to correct the current capital structure of the markets as it pertains to the exchanges. Tallies for this option also include those who feel that consolidation among the existing exchanges will naturally occur due to competitive market pressures, and no action needs to be taken to speed this up.

As rationale for their support of the status quo, several respondents indicated their belief that the local exchanges provide better liquidity and access to capital for newly listed, small companies. According to Michiel de Haan, Honorary President of Growth Plus in the Netherlands, if Europe were to have a pan-European exchange dedicated to high-growth companies, it would result in obscurity for the smaller listings. He advocates that tech companies find early liquidity on the local exchanges, then move to Nasdaq if and when they are ready;
“Only local investors will invest in niche high-tech companies. For Dutch companies, it is a choice between anonymity on Nasdaq, or being known in Holland.”

Kim Böttkjaer echoes de Haan’s belief that local exchanges better support the technology community. In addition to the stronger investor base, he believes that personal relationships with the local exchange enable him to “put together rescue packages” for distressed clients. This, he believes, would be impossible at a larger, pan-European exchange. He stresses that the lack of exit opportunities is not the fault of the exchanges, but the unrealistic valuations that VCs have placed on their portfolio companies;

“Not only are VCs trying to find exits for overvalued companies that survived the crash, they have continued to invest in companies at unrealistic valuations. This mismanagement cannot be solved by creating a new exchange.”

Others expressed the sentiment that Europe should not try to recreate the wheel, and should take advantage of the capital markets in the US rather than try to duplicate them. In the words of Mark Walthoz, Head of Studies and Strategy at Groupe Bankque Populaire;

“There is definitely NOT a need to create a dedicated technology exchange [in Europe]. The world only needs one, and that is Nasdaq. France has fashion, Germany cars. America simply has the marketplace [for technology growth stocks], and there is no problem with this. [Only] politicians and tax collectors worry about it. What happened to Easdaq resulted from the fact that the market wants only one marketplace—Nasdaq.”

The second most prevalent solution, favored by 22% (17 of 79) of the total group, was some sort of collaborative effort among two or more of the existing exchanges. The nature of the collaboration was undefined, and suggestions ranged from efforts to merge AIM with Euronext, to a shared index with common listing requirements and reporting features. The majority of these respondents suggested some collaborative effort between the three biggest exchanges; LSE, Euronext, Deutsche Börse, would be the best solution.

It is also noteworthy that the VC and PE communities are quite divided, both on the need for a dedicated exchange (44% yes, 52% no, 4% uncertain), as well as the solution favored. Given the role that the VC and PE communities played in launching Easdaq, this level of division may prove

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**VC/PE: Does Europe Need a Dedicated Tech. Exchange?**

- Yes, 44%
- No, 52%
- Uncertain, 4%

**VC/PE: Solution Favored?**

- New Exchange: 24%
- Lvg. 1 Exchange: 12%
- Collaboration: 28%
- Other: 12%
- Status Quo: 4%
- No Opinion: 20%
Feasibility Study: A Pan-European Market for Tech. Growth Companies

problematic for developing any coherent strategy.

Only 6% of the total group (5 of 79) favored the creation of a new exchange or a resurrection of Easdaq. The most commonly cited reasons against this option were the inability to gather critical mass, the inevitable competitive response from incumbent exchanges, and the fresh memories of the recent failure of Easdaq. However, many who dismissed the idea of building a new exchange from the ground up favored leveraging an existing exchange, or a collaborative effort among the exiting exchanges, as an alternative. In the words of Dirk Boogmans Managing Partner of GIMV in Belgium:

“Starting from scratch would be very difficult. Volume is a key factor for success, and a new market cannot gather critical mass to survive. Thus, it would be better to leverage an existing exchange.”

From a qualitative perspective, there is significant desire within the community to improve the ability of technology companies to raise large sums of capital for expansion. The quantitative analysis however, shows that Europeans are very divided on the solution to this problem and whether or not there is a need for a dedicated exchange. A small majority of respondents, 52%, does not currently see the need for a dedicated exchange. For the sizable group (43%) that favors the creation of a dedicated exchange, the majority supports the idea of a collaborative effort between the existing exchanges.

The division is clearly reflected in the responses of the VC and PE communities, whose unity will be essential to make any initiative successful. Ultimately, this division within the community may significantly retard or even prevent any efforts from taking root. The situation may be further exacerbated as the accession countries of Eastern Europe are integrated into the EU. In addition to the challenges of integrating these economies, their inclusion will increase the diversity of opinions and the complexity of the solution.

Dilemma:
- The solution most favored by the VC/PE and other communities is a collaborative effort between the existing exchanges.
- The solution overwhelmingly favored by the exchanges is to maintain the status quo.

SUPPORT FROM OTHER ORGANIZATIONS

Given the important roles that EVCA and the EC played in getting Easdaq off the ground in the mid 90s, it is important to consider which institutions would support a renewed effort to create a dedicated market. This analysis relies entirely on a qualitative review of the interview data.

**Federation of European Securities Exchanges (FESE):** Arlman indicates that the FESE’s role is to promote behind-the-scenes discussion among the pertinent players within the financial community. He further states its role is to influence the EC to create a level playing field for the various exchanges via sound regulation, but points out that it has no public role in fostering the evolution of the markets. He would be happy to make introductions to help facilitate collaborative meetings between the exchanges but, formally speaking, will not get involved in competitive issues.
**European Venture Capital and Private Equity Association (EVCA):** In the words of EVCA’s incoming Chairman, Herman Daems, “supporting a particular initiative is not the role of EVCA. EVCA’s role is to put issues on the table.” He believes that EVCA should make sure that policy makers are seeing the problem and addressing it.

When asked about the level of EVCA’s commitment, Justin Perrettson, EVCA’s Public Affairs Coordinator, was noncommittal. He indicates that he sees its role as a think-tank for the industry. He stressed that it is currently focused on educating policy makers on the importance of VC and PE to the overall community. Generally speaking, there wasn’t an overt eagerness to support any efforts to launch a new market.

Jean-Bernard Schmidt, EVCA’s current Chairman, is bullish on the prospects for improving Europe’s ability to produce successful technology companies. However, he does not favor the creation of a dedicated market. He proposed the creation of pan-European information system, similar to Bloombergs, for focusing attention on technology companies. Given his enthusiasm, Schmidt will likely do what he can to bring EVCA’s support to any particular proposal that he agrees with.

**European Commission (EC):** David Wright, Directorate General of the European Commission, is very sympathetic of the need to create a dedicated market for technology growth companies, but remains firm that it is up to the markets to restructure themselves. He believes that the role of the EC is to create the necessary legislation to enable a barrier-free capital market for Europe, and points to the recent directives as evidence that the framework for a common European legislation is already in place. Beyond the legislative agenda, he says that the EC’s only role is to prompt the debate between the markets. Although he acknowledges the EC’s previous support of Easdaq, he flatly states that the possibility of the EC providing financial assistance to set up an exchange is now out of the question.

Despite Wright’s firm stance that the EC would not back any new initiatives, he did indicate that they will enable the flow of capital to support the growth of accession countries’ economies. If a new initiative for a dedicated technology growth market demonstrated the ability to link these economies together, then he believes his colleagues might take a look at it (implying that some level of financial support for such a proposal is not out of the question).

Paul Goldschmidt, a former Director of the EC, agrees that the EC has no role to play in the establishment of a market, and that the initiative must come from the market itself. He acknowledges that the commission played a bigger role than they should have when Easdaq was created, but that their motivation was to create a level playing field for Easdaq in the face of French protectionism. Ultimately, this was seen as favoritism and will be avoided in the future.

Goldschmidt did, nevertheless, reinforce Wright’s suggestion that the EC could be persuaded to contribute funds towards a plan that demonstrated high value for the accession countries. He suggested that a pilot with Poland and Hungary
might entice the EC’s participation, both public and financial. However, he also acknowledged that the accession countries might not be ready for a public market yet.

**European Investment Fund (EIF):** According to Jacques Lili, Managerial Advisor for the EIF, the EIF is currently working to set up a technology financing platform for Eastern Europe. However, he stresses that the EIF can help the market by strategically placing money, but can’t make the market. He indicates that the EIF must co-invest. With regard to the possibility of creating a fund dedicated to technology, such as the model as described by William Stephens in ‘Options for Creating a Dedicated Market’, Jacques flatly states that the EIF is unable to invest unless there are other co-investors. It is only willing to invest up to a third of the total fund, but not more. As such, he was skeptical of the strategy to create a dedicated fund that would attract the EIF’s participation. However, Jacques reiterated that the EIF is open to looking at any proposals for improving the current capital markets.

**Nasdaq:** Easdaq was originally modeled after Nasdaq, and Nasdaq took an interest in the Easdaq initiative from the very beginning. Given the resemblance, it is not surprising that Nasdaq eventually acquired Easdaq, albeit when Easdaq was on the brink of bankruptcy. Today however, their attitude appears to be much cooler. According to David Warren, Nasdaq’s CFO, Nasdaq’s current CEO has pulled the company back from its previous global expansion efforts and is focused on re-trenching in the US. Warren states that now is not the time for Nasdaq to be looking at expanding into Europe. This, combined with Nasdaq Europe’s recent failure, makes it an unlikely candidate for support of a renewed effort.

**EuropaBio:** Both Johan Vanhemelrijck, Secretary General, and Adeline Farrelly, Communications Manager of EuropaBio expressed grave concerns about the lack of adequate funding—both at the VC stage and via a well-functioning IPO market—for Europe’s technology upstarts. Not surprisingly, their concern is motivated by the severe impact that this situation has on the biotech community. Both appear to be willing to participate in the earliest efforts to address the situation. As such, EuropaBio may prove to be an enthusiastic ally in any new initiatives.
Key Attributes of a Dedicated, pan-European Growth Market

Although the US capital markets serve as the best point of reference for analyzing Europe’s performance in producing technology stocks, the urge to simply reverse engineer Nasdaq and the structure of the US capital markets and then transpose the formula to Europe must be resisted. Because of the unique characteristics that separate Europe from the US, any solution to the issue underperformance in technology must be uniquely European.

Based on the data collected, it is possible to paint a picture of the ideal European marketplace for technology growth companies that builds on the strengths of Europe while mitigating the weaknesses. The following is an attempt to do just that.

PAN EUROPEAN WITH LOCAL BASE

A successful market must enable companies to access local investors while simultaneously pulling from a pan-European base of investors. As described by Bøttør and de Haan, the local markets have proven most effective at providing capital and liquidity to tech companies when they are just getting started. However, once they reach the stage where they are ready to expand internationally throughout Europe and/or globally, they will need a depth of capital and liquidity that can only be amassed at a pan-European level.

To attract investors at the earliest stages, companies must have a direct window into the local market(s). Because nascent small-caps can more easily find exposure and liquidity at the local level, a company’s national origin is the primary factor determining where a small, tech company will initially list. With the underwriting investment bank having the most influence on the process, it will more than likely recommend listing on the local market which is part of its local ecosystem, and where the company will find the most appeal with retail investors. Further, local investors rely less on analyst research and more on familiarity and emotion when investing in small-cap tech stocks. According to Stijn Bijnens, small-cap stocks are not attractive to foreign retail investors who are emotional in their investing habits. He states;

“Retail investors are driven by emotional sentiment, and only invest in small, tech companies of which they have personal knowledge.”

This phenomenon was reflected in the experiences of the growth exchanges of the mid 90s. The vast majority of companies listed on the Nouveau Marché and the Neuer Market were French and German, respectively. Easdaq had a slightly
more international makeup, but the majority of listings were still Belgian. Accordingly, the lack of a large local market in Belgium has been cited several times as a severe handicap for Easdaq.

Once a company acquires enough momentum to expand internationally, the support of local investors, especially in the smaller markets, is not enough. The private investors are “punters,” and tend to sell securities quickly as soon as they have made a gain. This type of investing is adequate when a company is small and requires less capital. When a company needs larger amounts of capital with more predictable liquidity for expansion, it will need to attract institutional investors. The institutional investors require deep liquidity—often times they require enough liquidity to sell their position in a day—and rely more heavily on analyst research (internal or external). The critical mass of companies to support this level of liquidity and research can only come at the pan-European level.

Further, research on small caps can only be supported with a significant aggregation of stocks in a given sub sector: e.g. biotech, IT, telecom, etc. According to Greg Revenu, Managing Director of Bryan, Garnier & Co.,

“The costs of one analyst can be paid from the brokerage of three large stocks, but with small caps, it may take the brokerage of 20 stocks. There needs to be a sector approach, so that the knowledge base of the sector can be applied to a number of small caps—then they compare across stocks.”

Only at the pan-European level will there be a sufficient number of companies to support this; individually, the European markets are too small.

MARKET MAKING

To increase liquidity for smaller technology companies, research is required to focus investor attention and reduce asymmetries in information. With the market-making model, market makers have an incentive to disseminate research on tech stocks in order to sell their holdings. No other model is as effective at drawing attention to small technology stocks, which are otherwise lost among the larger, better-known blue-chips. The need for market making was reinforced by a significant number of the interview respondents.

However, as mentioned above, research is laborious and expensive, and can’t be justified locally on just a few companies. The costs must be spread across a wide variety of companies. Again, any new market initiatives would need to be pan-European to support the research needed for such companies. The costs of research are then recouped by the market makers, who earn a spread in the buy/sell process. Typically, the spread is about 5%, but has been as high as 10% in situations where asymmetric information and high risk still exist. This is the only model that can provide liquidity for small-cap companies and simultaneously pay for the research.

The need for a dedicated market to support research and market making is accentuated by the recent decline in demand for research, as described above. A decline in demand for research shouldn’t be confused with lack of need for research—tech growth stocks will still need intermediaries to focus attention and
disseminate information. With institutional investors relying more heavily on in-house research, and buy-side brokers more reluctant to pay for research, tech growth stocks must be consolidated in order to provide greater economies of scale for the analysts.

**STRUCTURE AND REGULATION**

To give investors the necessary confidence to invest in the tech growth sector, increased disclosure and transparency are required. For this reason, a dedicated exchange should have stricter requirements regarding the disclosure of information relative to the main exchanges.

To attract listings, Easdaq had several regulations that appealed to VCs and entrepreneurs at the expense of investors. The interests of the investors must be protected above the interests of the inside shareholders (VCs and entrepreneurs), otherwise investor participation will suffer. To prevent the dumping of shares, which results in a run on the market as was seen with Nasdaq Europe when the bubble collapsed, any new initiative should implement a registration process that imposes a time-delay for a given percentage of the registered shares. The VC community will likely protest this, but it will ultimately be required to attract investor participation and maintain liquidity.

**BRANDING AND BUDGET**

A new market place must project the image across Europe as being the place for tech growth stocks. Investors, both retail and institutional, must be reached with a campaign that generates a renewed excitement and enthusiasm for technology. Executive management within the new entity should be representative of and sensitive to Europe’s cultural diversity, and the campaign must be sensitive to the cultural differences from county to country. Branding and marketing are also key to creating this critical mass of analysts. The market must constantly be reaching out to the investment-banking community to assure them that liquidity and capital are available at the new market. The sponsors of any new effort should be prepared to contribute a sizable budget to support extensive marketing efforts.

**LONDON CALLING**

Based on the lessons learned from the downfall of the 90s growth exchanges, the best home for a renewed effort would be one with a strong home market. A new initiative must build critical mass as quickly as possible and be able to stave off the inevitable national response from the local markets. If located in a small market, the new initiative risks losing liquidity and listings to a larger market.

There is much data to support the notion that London has a critical mass of financial institutions, entrepreneurship, and liquidity to best support any efforts to create a dedicated technology market. There was numerous anecdotal data from the interviewees acknowledging London’s lead in this area. In the PricewaterhouseCoopers 2003 IPO report, London secured 52% of the total IPOs in Europe, with 91 out of 174. It also raised 44% of the total offering value from all European IPOs with €5.07 billion out of €11.50 billion. According to
the 2004 EVCA Yearbook, the UK leads Europe as both the destination and country of management for all VC and PE investments in Europe.

Given its financial dominance within Europe, London would most readily supply the critical mass of investors, technology companies and momentum to any new initiative.

A large percentage of the interviewees indicated that any efforts to establish a market for tech companies ought to emanate from London. Further, many suggested that the VC, technology and other communities across Europe should accept and support London as the financial center of Europe. Further, according to Didier Duhem, president of EuropeOffering and a former EASD board member, “London appears to be a more palatable environment for cross-border institutional investment.” This is also confirmed by the 2003 IPO report which indicates that of the 21 cross-border IPOs in 2003, 14 (67%) occurred on the London Stock Exchange. This may be an indication that Europeans are more willing to venture to London rather than other cities such as Paris or Frankfurt.

According to Hermann Hauser, Director of Amadeus Capital Partners in London, “the lack of a pan-European regulator [equivalent to the SEC] is ‘a real bugger.’” The improbability of Europe establishing a pan-European regulator anytime soon is another reason for promoting London as the epicenter of any initiatives to develop a tech growth exchange. Many in the VC community agree that London has the most conducive regulatory framework among all the European countries. Hauser confirms this view;

“London could become the ‘Delaware of Europe.’ Any tech company in Europe could incorporate in London, and thus be subject to the UK laws, which are closest in Europe to the US laws.”

The disadvantage of choosing London as the home for any new effort is that it will likely invoke a strong nationalist response, particularly from France and Germany. However, this is likely to occur no matter where the market is based. Given the disadvantage faced by Easdaq for lack of support from an established parent exchange, the nationalistic backlash is probably a reasonable price to pay for London’s liquidity, regulation and expertise, provided that a new initiative—if based in London—has the support of LSE/AIM.
Options for Creating a Dedicated Growth Market

The interview data proved to be fertile ground for finding solutions for creating a dedicated, pan-European market for growth technology stocks. In the following section, a variety of possible solutions is presented. With a picture of what the ideal market should look like, each of these solutions can be stacked up against the ideal exchange to see how closely it matches. Additionally, it is worth the effort to consider how feasible is each of the solutions.

Euronext: An Attractive Opportunity

Based on extensive data from a wide variety of sources, Euronext represents an attractive—though imperfect—opportunity for the genesis of a market dedicated to technology growth companies. This conclusion is driven by several factors, including:

- The market data overwhelmingly supports an initiative that builds off an existing exchange over the creation of a new exchange;
- Euronext was the only exchange that expressed willingness to address the problem;
- With the local exchanges of Portugal, France, Belgium and the Netherlands, Euronext is already pan-European in nature, while maintaining a strong presence in several local markets—one of the key factors for the “ideal” European market;
- With 19% of the total value of equity trading, Euronext represents the second largest pool of liquidity, behind LSE/AIM (40%);
- Euronext is in the process of creating Altanext, an unregulated market for small- and mid-cap companies.

Of the eight exchanges that participated in the interview process, Euronext was the only one that expressed a willingness to address the problem. In the words of Martine Charbonnier, Executive Director of Listings, “Europe must create the conditions for enabling small- and mid-cap companies to list on public exchanges.” However, she was quick
to point out that the creation of an exchange dedicated to tech growth companies, whether from scratch or building of an existing exchange, is not the solution. She believes that what is needed is a dedicated marketplace.

Charbonnier indicated that Euronext would be willing to consider an initiative to create a marketplace, similar to Altanext, dedicated to technology growth companies. She suggests that the marketplace could draw on tech companies from both the regulated and unregulated segments, and would serve to create a critical mass of analyst focus by drawing pan-European participation.

Such an initiative must be pushed by a coalition of the willing. Charbonnier believes that the dedicated commitment and participation from Europe’s VC community is essential. The challenge, however, is that for the VC, whose primary motivation is to achieve the maximum return on investment, the lure of Nasdaq is very seductive. There will always be a strong pull to Nasdaq for Europe’s most successful VC-backed companies. As such, Nasdaq may in fact be the biggest competitor to any pan-European attempt to create a tech growth exchange. Charbonnier points out that the success of any attempt would require a commitment from the VC community not to bring their best companies to Nasdaq. Given the VC’s focus on returns, this may be an unrealistic request. Thus, the dominance of Nasdaq remains a challenging barrier to any new European initiative.

The glaring disadvantage of leveraging Euronext is their current trading model. In addition to being order rather than price driven, the Euronext platform has been cobbled together to accommodate the legacy platforms of the four exchanges that it swallowed. Some have claimed that as a result, it is somewhat cumbersome and unreliable. According to a recent article that appeared in Forbes Global;

“Dutch brokers are so incensed about system breakdowns and rising trading costs since the merger [into Euronext] that they have approached the London Stock Exchange to set up a new market in Amsterdam." [Orr, 2003]

However, Euronext’s weak trading platform also presents an opportunity for Easdaq to leverage its superior technology and attract the attention of Mr. Théodore.

A second disadvantage of Euronext is its lack of presence in London, notwithstanding its recent acquisition of LIFE. As mentioned above, London is already home to the largest financial market in Europe and, as a home market, would provide the fastest accumulation of critical mass for a new initiative. If Euronext were to initiate a new market, the likelihood that LSE/AIM would respond competitively is high.

Given Euronext’s absence in London, the most compelling scenario would be the acquisition of AIM by Euronext. AIM markets itself to small- and mid-cap growth companies and appears to be making an effort to draw overseas IPOs. An acquisition of AIM would immediately give Euronext a local presence in Europe’s largest financial market, and direct access to the regulatory environment of London. However, given the highly competitive environment, an acquisition
may be more wishful thinking than a feasible strategy unless the LSE is given financial justification for letting AIM go.

AIM

Many respondents suggested that AIM would be the best market from which to launch a new initiative. Given presence in London, and with more than 750 listed companies and combined market cap greater than €32 billion, AIM makes an interesting case as a platform to launch a new initiative. As mentioned above, AIM has recently given up its status as a regulated market and markets itself to small- and mid-cap growth companies. According to David Adams, AIM’s move towards deregulation will draw companies from outside the UK and make it a popular choice for IPO’s. Adams speculates;

“Rumors are that AIM would be better to break away from LSE. Then, AIM could be built into a pan-European exchange. By Q1 [2005], a US company will list on AIM, over concerns about Sarbanes Oxley.”

Further, AIM is connected with the TechMark index, a specially developed segment of the Main Market that is marketed to innovative technology companies. Ann Glover feels that AIM should do more to promote its TechMark index, and points to AIM as the likely solution to Europe’s technology woes.

Despite the clear benefits, several factors make AIM an unlikely candidate for launching a new effort. Notwithstanding rumored efforts to pull from outside the UK, AIM is still heavily UK-oriented. With only three listings out of 845 from mainland Europe, AIM has a long way to go before becoming pan-European.

Perhaps most discouraging is the apparent lack of willingness of AIM to address the problem. Raquel Hughes of Product Management and Development at LSE/AIM maintains that a good technology company can find plenty of liquidity and capital on either the LSE or AIM. She is somewhat defensive of the VCs tendency to “beat up on the exchanges,” and claims that the lack of exit opportunities is a symptom of cultural issues, not the fragmentation of the capital markets. “To create another exchange,” she says, “would only exacerbate the problem.” She is strongly in favor of the natural course of consolidation among the exchanges and believes that companies will naturally be drawn to London’s deep liquidity. As a result, Ms. Hughes is content to maintain the status quo, confident that the natural evolution of regulation and consolidation will favor the LSE and AIM. She points to TechMark as a solution that already exists.

COLLABORATION AMONG MULTIPLE EXCHANGES

On the surface, a collaboration between two or more of Europe’s existing exchanges has many benefits. A collaborative effort would be the fastest route to creating a pan-European market that has access to local markets while simultaneously pulling from a pan-European base of investors. It would also
most readily accumulate critical mass. In fact, it would likely start with critical mass. Further, leveraging the existing infrastructure of these exchanges would be the most efficient solution.

Although it was most commonly stated by interview respondents as the best solution for enabling tech growth companies to achieve public listings (behind maintaining the status quo), a collaboration between the existing exchanges seems entirely unfeasible. None of the representatives of the eight exchanges that participated in the interviews indicated any willingness to cooperate or collaborate with another exchange. On the contrary, the exchanges appear to be hostile to the idea of collaboration among themselves.

Though disappointing, this reaction is quite understandable. With a highly competitive and unsustainable marketplace of 30+ exchanges in Europe, each exchange is in a struggle for survival. Now that most of the exchanges are publicly traded companies themselves, their decisions are motivated by increasing their own shareholder's value, not improving the plight of VC-backed tech companies. Collaboration in such an environment is highly unlikely, and any consolidation will come through acquisition. This concept is sometimes lost on VCs and others who seem to perceive the exchanges as public utilities that should act for the common good, rather than private entities acting on behalf of their shareholders.

Unwilling to collaborate and fighting for survival, the exchanges, with the notable exception of Euronext, do not support any efforts to address the issue of providing access to the public markets for tech growth companies. Representatives from LSE/AIM, the Deutsche Börse, and the Borsa Italiana all indicate that a dedicated exchange is not needed, and that their exchanges are capable of providing adequate liquidity for tech growth companies via access to a pan-European investment pool. According to Stefan Hofer of the Deutsche Börse, with 50% non-German investors, the Deutsche Börse is a pan European exchange. Luca Lombardo, Director at the Borsa Italiana, makes the same claim regarding Borsa Italiana’s 35% foreign investor participation.

Upon closer scrutiny, such claims appear to be more of a rationalization against cooperation and consolidation, rather than an accurate reflection of the capabilities of their exchanges. The fact that the Deutsche Börse has 50% non-German investors does not validate it as a pan-European exchange given that Germany only represents about 16% of the total population of the EU. However, even if these exchanges were truly pan-European in their ability to draw investors, the fact that there are so many divides the total pool of investors as seen by companies listed on their exchanges. Just as a dual listing divides liquidity for a company, so do multiple pools of investors reduce liquidity for listed companies.

Raquel Hughes of the London Stock Exchange maintained a similar stance that the LSE or AIM provide plenty of liquidity. She showed no interest whatsoever in any collaborative efforts, and flatly expressed the willingness of LSE/AIM to
follow the natural evolution of regulation and consolidation among the exchanges.

**TRANS-ATLANTIC MODEL**

One solution to the lack of exit opportunities faced by VCs is to keep the R&D of European technology companies in Europe, but establish the “front end” of the business in the US. This model seeks to leverage European technological expertise, while positioning the company to leverage America’s superior capital markets. Paul Harvey, Managing Director at *Abbey Road Ventures* in London, is an outspoken proponent of this model, which he has dubbed the Trans-Atlantic Model.

Harvey, an American with roots in investment banking, believes that European engineering is superior to that of the US, and that the European tendency to remain in the home country is an advantage because companies will not lose their workforce “over lunch,” in contrast to the US, where people are generally more mobile between the states. European financial markets, however, are best suited for large blue-chip companies, not technology growth companies. The US has the best financial markets in the world for tech companies, and Europe should leverage these markets rather than try to recreate them. Harvey is actively recruiting support to instigate widespread adoption of this model within the European VC community.

To support his strategy, Harvey points to the success that Israel has enjoyed with this model. He indicates that Europe has only produced two VC-backed success stories with valuations greater than $1 billion: Sage and Business Objects. Israel, by sharp contrast, has found a sweet spot by creating technology companies that find capital, public and private, on the US markets. With over 100 Nasdaq IPOs, Israel has produced eight VC-backed companies with market caps greater than $1 billion. This statistic is all the more remarkable when considering that Israel’s population is only 6.5 million. Harvey’s vision is to leverage this model as a catalyst for developing the tech growth industry in Europe.
The Trans-Atlantic model has substantial support within the VC community. Lazard’s Tim Linacre says that he is happy to bring his portfolio companies to the US capital markets, and echoes Harvey’s opinion that Europe should acknowledge that the best markets for tech growth companies are in the US, just as Europe is beginning to acknowledge that Asia is the best place to manufacture cars.

Though some companies have found success with this approach, there are a host of difficulties that will make it a viable path for only a small minority of European technology companies. To begin with, the strategy presumes that the best European entrepreneurs are willing to pack their bags and relocate to the US, or turn the reigns of their company over to US managers. Given Harvey’s previous argument that Europeans like to remain in their home country, and the need for tech entrepreneurs to remain at the executive levels of their company, it is likely that many European entrepreneurs would look for VCs that will help them list in Europe, rather than agree to uproot their families and move to the US.

Further, any company that IPOs in the US will be subject to Sarbanes-Oxley, which is widely regarded as an anathema to small-cap technology companies. And, with recent changes in US regulations, once listed in the US it is extremely difficult to leave.

Listing in the US can also be far more costly for European companies. In addition to the increased logistical costs of operating on two continents, Arlman at the FESE indicates that “the US is the is only place in the world where investment banks still get 7% for taking companies public.”
Further, Nasdaq also has problems with liquidity at the lower levels, so a small European tech company might not be any better off there. According to Arlman, within a month or two following the IPO, the attention on small companies goes down. This point is reinforced by Wim Ottevaere, CFO of Innogenetics, which was Easdaq’s first—and among its most successful—listings. Even today, Wim believes that Innogenetics, which is currently listed on Euronext, is not suited for a listing on Nasdaq because it “wouldn’t have the liquidity of other companies there.”

Perhaps the most compelling argument against the Trans-Atlantic model is that, were it successful, it would effectively export Europe’s brightest stars to the US. In order to list in the US, a European technology company would need to have a significant US presence and most likely be incorporated there. In addition to strengthening the success of the US capital markets at the expense of Europe’s, the widespread success of this model would perpetuate Europe’s lack of visible success stories.

With the substantial difficulties of bringing a technology company to the US, the Trans-Atlantic model will likely remain an option for only a small minority of Europe’s VC-backed tech companies. Given the longer-term macro effects that this model (were it successful) would have on Europe, the VC community should look for ways to enable their best portfolio companies to remain in Europe rather than export them to the US.

**RE-LAUNCH EASDAQ (OR SIMILAR)**

Re-launching Easdaq, or creating a similar ‘green-field’ effort, has the advantage that a pan-European exchange could be built correctly from the ground up. It would eliminate the issues of legacy problems that would result from working with an existing exchange or the difficulties of getting multiple exchanges to cooperate. That being said, the possibility of successfully re-launching Easdaq seems to be remote at best. First, there is almost no support for an effort to re-launch Easdaq or to create a new exchange. With but a rare few exceptions, nearly all of the interview respondents, *even if they supported the concept of a dedicated exchange*, flatly stated that such an effort could never succeed—only 5 of the 79 interviewees expressed support for re-launching Easdaq or creating a new exchange. The most commonly cited reasons against this option were the inability to gather critical mass, the inevitable competitive response from incumbent exchanges, and the fresh memories of the previous failure. Clearly, there is no will within the marketplace to launch a new exchange.

Second, the minimum amount of capital required for any such attempt to have even a remote chance of success is prohibitively high. According to Stanislas Yassukovich, former Chairman of Easdaq, a minimum of €100 million would be required to launch a new exchange. This number was confirmed by Jos Peeters, one of the original founders of Easdaq. Given the high-risk profile of such an endeavor, and the fact that few organizations are in the business of funding stock exchanges, it is highly unlikely that this amount of capital could ever be amassed.
In addition to the practical barriers, there are compelling arguments that such an effort would actually exacerbate the problem faced by the technology growth sector by creating further capital market fragmentation. In addition to itself, any new exchange would likely incite the local exchanges to re-launch initiatives of their own, as they did in the mid 90’s. The result would be a repeat of the competition and fragmentation that led to the downfall of these growth exchanges in 2001 and 2002.

**Natural Evolution/Consolidation**

Many of the interviewees who favored the status quo over any attempts to reorganize the capital markets indicate that competitive forces will naturally lead to consolidation. As such, they believe that fragmentation, inefficiencies and illiquidity will naturally be eliminated.

The history of the US markets would suggest that there is a tendency towards convergence among a competitive cadre of exchanges. Clearly, the current situation, with 30+ exchanges across Europe, and 21 “new” exchanges, is unsustainable. The duplication of resources for this model, including the high costs of maintaining independent trading platforms, will eventually force many of the exchanges into financial distress, resulting in a wave of acquisitions. Those likely to emerge on top are the exchanges that have the most listings and deepest liquidity: LSE, Euronext, Deutsche Börse, Borsa Italiana, and Bolsa de Madrid. Norex will likely unify as a single exchange serving the Nordic and Baltic countries.

The natural course of consolidation will help to reduce the fragmentation within the capital markets, thus increasing the liquidity available for European listings, technology or otherwise. However, there is no evidence that consolidation will lead to a dedicated market for technology growth companies. Further, it is very difficult to predict the time frame during which consolidation will occur. Thus, waiting for consolidation, and hoping that it will spontaneously address the needs of the technology community, is not a wise or proactive means for addressing the situation.

**Norex**

Norex is a collaboration among 8 nations—Iceland, Denmark, Sweden, Norway, Finland, Lithuania, Latvia and Estonia—all using the OM Technology trading platform. OM Technology and Stockholmsbörsen are owned by the same parent company, OMHEX. Clause-Urban Dackberg, Acting Head of Products & Markets at the Stockholmsbörsen, believes that the exchanges for the 8 countries will eventually merge into one. This is dependent on progress with the EC directives, which he expects to be implemented in 2006.

Scandinavians are proud to point to Nokia and Ericsson as technology success stories. However, both are blue-chip companies, not VC-backed tech growth companies, and may even be detrimental to Scandinavia’s ability to produce new technology companies. Both Nokia and Ericsson derive a substantial amount of liquidity from local markets and are not likely to move to another exchange. Because of their dominance in technology within the local market, investors
looking to diversify will always find them a lower risk option as compared to Nordic technology startups. For this reason, Dackberg claims that the overwhelming success of Nokia and Ericsson “hurts other tech companies” in Scandinavia. Once the exchanges merge, he sees no reason to split off a separate technology exchange, but expects that they will maintain a technology index, and would be based on MSCI’s Global Industry Classification Standard (GICS).

The market cap of Norex is only about 7% of the total European market cap, but the technology sector on Norex accounts for nearly 50% of Europe’s technology market cap, primarily due to the presence of Nokia and Ericsson. As mentioned previously, if Nokia and Ericsson are removed from the picture, then Norex’s share of the European technology growth sector is probably below average. Given their geographic and cultural isolation, combined with their small market cap, Norex does not represent a good platform for launching a new initiative.

TECHNOLOGY INFORMATION PLATFORM

Jean-Bernard Schmidt, Director General, Sofinnova Partners, and current EVCA Chairman, advocates the creation of an information platform similar to Bloombergs as the best approach to providing liquidity and exits to Europe’s tech growth companies. He believes that such a platform would create a focal point to draw a critical mass of analysts and investors and enable growth companies to be recognized across Europe. Further, he stresses that the new directives that are being pushed by the EC would give investors confidence to invest on a pan-European basis.

Schmidt proposes to approach LSE, Euronext, and the Deutsche Börse and convince them that it is in their collective best interest to collaborate on addressing the small-cap companies. He believes it would be feasible for them to put together an information platform, and fund the resulting trades that occur on the platform. Other exchanges can contribute to the platform on a pro-rata basis.

While such a plan does have some merits, its obvious fault is that it relies on the cooperation of the three big exchanges which, as previously stressed, is highly improbable. Further, though it may improve awareness and facilitate the dissemination of information on tech companies, it lacks teeth as a complete solution to create a vibrant marketplace.

TECHNOLOGY MUTUAL FUND

To change the attitude of the institutional investor, there needs to be an incentive, a limit to their risk, and some way increase their reward/liquidity. William Stevens proposes to create mutual funds where the EIB offers guarantees funded by the European Commission. Thus, the downside of the institutional investors would be secured by EC. The EIB (or EIF) could facilitate the creation of these funds, with the EC providing capital to create them. The EC could also buy out investors who want to get out of these funds, to help improve liquidity. However, as previously noted, the EIF is only willing to invest up to a third of the total fund, but not more. Thus, a significant other contributor would need to be found to make such a model feasible. That being said, Jacques Lilli,
Managerial Advisor to the Fund, stressed that he is open to looking at any proposals for improving the current capital markets.
Recommendations

A TWO-FRONT ATTACK
The initiative to address Europe’s underperformance in technology will arise in those who are most directly affected by the problem. As with the explosion of growth exchanges in the mid-90s, the first movers are likely to be leading members of the VC and PE communities who aspire to build great technology companies and are frustrated with lackluster results within their portfolios. The following recommendations are intended to offer realistic and actionable steps to be initiated by a relatively small team of leaders from the VC and PE communities.

Europe’s underperformance in producing powerhouse technology companies cannot be pinned on any single factor: it is the result of a complex mix of cultural (market) fragmentation, capital market fragmentation, socialism and risk aversion, underperformance in the VC community and other cultural and social factors. Some of the underlying factors—such as Europe’s cultural fragmentation—are not realistically addressable. Two key factors however—underperformance in the VC community and fragmentation within the capital markets—could simultaneously be addressed as part of a coordinated effort initiated by a small team of individuals. The objective would be to remove the forces that constrain the technology capital pipeline at either end, and eliminate the syndrome of “starvation at both ends.” Such an effort could substantially improve Europe’s ability to produce global technology companies, while simultaneously improving the ability of Europe’s VC and PE communities to profit from them.

As part of a two-front attack, focused efforts must be made to improve the investment patterns of the VC community. A concurrent strategy for creating a well-functioning, dedicated market for these same companies to raise public capital is also necessary. Because of the interconnectedness of these factors, an attempt to address the issue simply by creating a dedicated market, or by improving investment strategies alone, would ultimately fail. The problem must be attacked with simultaneous, coordinated efforts. With the ultimate goal of creating a clear pathway through the technology capital pipeline, either effort is wasted in the absence of the other. As Europe’s best and brightest entrepreneurs begin their journey, they must see before them a clear pathway starting at seed funding and ending with deep liquidity on the public markets. Few will make it all the way, but the path will inspire all.
**TASKFORCE TECHNOLOGY**

As exemplified by the rise of Easdaq, great accomplishments often are borne of the efforts of a small group of dedicated and highly motivated people, rather than large committees and organizations. A new effort to create a dedicated market must begin with one visionary and energetic person. Experience and a fat rolodex are a prerequisite.

Further, this leader must define a vision. The vision must tap into the underlying needs of the various communities that surround the technology growth sector, both financial and institutional. The vision must resonate with an adequate number of industry heavyweights, and be able to draw the support of at least one or two key institutions. Finally, the visions should NOT look like “Easdaq II.” The failure of Easdaq has generated a barrier of skepticism that would prevent a critical mass from rallying around any plan to resurrect it. The vision should paint a clear picture of how each of the relevant communities will benefit from removing the constraints at either end of the technology capital pipeline.

The next step is to assemble a dream-team of like-minded heavyweights from relevant industries—call it “Taskforce Technology”—to lead the two-front attack. Given their vested interest in the success of such a mission, the VC and PE communities would be a good place to start. With EVCA as the most visible and vocal organization for the VC/PE communities, it would be very helpful to have a senior-level EVCA official—such as the Chairman—on the team.

The participation of investment banks is critical to the success of any new technology market. As such, the team should recruit a well-respected member of one of the top-tier investment banks. Also, given the encouraging response from the fund managers, and their importance to the success of a new effort, a member of this community would be helpful as well. The EIF contributes a substantial portion of the VC funds in Europe and also appears to be willing to cooperate on such an effort. A member of this organization may be a good addition to the team. A four- to six-person team is probably adequate, as any larger number is likely to become unmanageable. It is critical that each member of Taskforce Technology be highly respected within his/her industry, and well connected. It is also critical that each buys into the vision and be committed for the long haul.

**ADDRESS UNDERPERFORMANCE IN THE VC COMMUNITY**

Skeptics will be critical of any attempts to address the public markets if they don’t see the VC community improve its strategies for growing tech companies. To begin, the VC community must become emboldened, and shake off its aversion to risk. The bigger the risk, the bigger the reward—Europe will not produce a Microsoft or Cisco until the VC community gets comfortable with a higher level of risk. This means dramatically increasing the average amount invested in a given company—seed through expansion—while simultaneously reducing the number of companies that get funded.
The VC community also has the opportunity to lead Europe to a higher level of cooperation and collaboration by increasing cross-border syndication. To partially offset the increased risk of larger investments in fewer deals, the VC community will need to dramatically increase its level of trans-national syndication, which in 2003 was a paltry 18.1%.

Lastly, the VC community can help to foster the emergence of centers of entrepreneurial excellence similar to Silicon Valley and Boston. This can be accomplished by identifying where these centers have natural roots and then focusing investment activities there. The objective would be to draw Europe’s best entrepreneurial and engineering talent to a limited number of centers through focused and visible investment activities. Likely candidates for centers include Cambridge, Stockholm and Switzerland.

These three issues—larger investments in fewer companies, increased syndication, and a focus on a limited number of centers of entrepreneurial excellence—should become a mantra for Taskforce Technology. With participation and leadership from EVCA, a highly visible campaign to catalyze the entire European VC/PE community into action on these two issues should be initiated.

ADDRESS STARVATION AT THE PUBLIC MARKETS

Concurrently with the agenda to address growth strategies at the VC level, Taskforce Technology must convert the vision for a well-functioning public market into a detailed action plan that illustrates the benefits of a dedicated market and how to make it a reality. The plan should be conceived with the needs of the various communities that will support it, and targeted towards one or two institutions. Again, the plan should NOT look like a resurrection of Easdaq.

In launching Easdaq in the early 90s, support from two key institutions—EVCA and the EC—was pivotal. A renewed effort to create a dedicated market for technology must also have the support of one or two key institutions. The first should be EVCA. EVCA served as a platform to draw industry participation and begin spreading the vision. Although EVCA appears to be less willing to participate with the same level of activity as before, it can still fulfill the mantel of a “soapbox” from which the vision can be evangelized.

The EC was the second institution critical to launching Easdaq. Given that Easdaq was intended to be pan-European from the ground up, the EC was a good choice. However, with a renewed effort focusing on leveraging an existing exchange, that exchange should replace the EC as the second institution supporting the new effort.

Once formulated, the plan should be presented to interested exchanges at the highest level. Care should be taken to emphasize how the plan will benefit this exchange by drawing liquidity from across Europe and away from the competition, and will yield a vibrant and sustainable marketplace for the
technology growth sector. All members of the team, as representatives of their industry(ies), must articulate how and why they are able to secure the commitment of their industry(ies) to ensure the success of the endeavor.

**TIMING**

Given the importance that timing played in the downfall of the previous high tech exchanges, it would be prudent to consider the current timing for launching a new effort. Both the problem and the solution are complex, so the proponents of a new plan must be prepared for a long struggle—perhaps as long as 10 years—before they can expect to see the benefits of a free-flowing capital pipeline. For the purposes of cash-flow and the ability to acquire the precious critical mass, the state of the market during the next 2-5 years must be considered.

By most indications, the worst of the dot.com crash appears to be behind us, and the technology growth sector appears to be showing signs of life. In his most recent “Money for Growth” Report, Keith Arundale of PricewaterhouseCoopers states:

“The signs in the marketplace are encouraging with increased confidence amongst the venture capital firms, a more active M&A market, some recent successful technology IPOs, improved earnings of the large technology companies, more spending on IT forecast, an improving entrepreneurial culture and a continuing spirit of innovation.”

If, in fact, the European tech sector is on the cusp of an upswing, now is the time to begin laying the ground work for a new market. Ideally, the market would open just prior to a renewed surge in activity and interest. It probably goes without saying, though, that a major collapse of the economy within the first 6-10 years of operation could prove fatal to any upstart market, as it will take longer to acquire the necessary critical mass to survive. The success of Nasdaq, of course, was driven by the companies that had enough time to become significant players—i.e. MCI, Microsoft, Intel—and stayed with the exchange. In any case, the time to start the journey is now!
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5. EVCA, *EVCA Yearbook 2004*, EVCA 2004


Appendix A: Complete List of Interview Respondents

The following is a complete list of all interview respondents. Two respondents who were interviewed simultaneously were counted as one interview, provided that one respondent was more vocal than the other and they shared substantially the same opinion.

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<td>Andrew</td>
<td>Retired</td>
<td>Beeson Gregory (former)</td>
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<tr>
<td>10</td>
<td>Bijens</td>
<td>Stijn</td>
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<td>Boogmans</td>
<td>Dirk</td>
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<td>GIMV</td>
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<td>12</td>
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<td>Peter</td>
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<td>Financing</td>
<td>Stockholmsbörsen</td>
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<td>Daems</td>
<td>Hermann</td>
<td>Chairman</td>
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<tr>
<td>21</td>
<td>de Bellefroid</td>
<td>Patrick</td>
<td>Chairman</td>
<td>Pulaetco Bankers</td>
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<td>22</td>
<td>de Haan</td>
<td>Michiel</td>
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<tr>
<td>23</td>
<td>De Vos</td>
<td>Olivier</td>
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<td>Manager</td>
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<td>Didier</td>
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<td>SG Cowen International</td>
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<td>34</td>
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<td>Tim</td>
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<td>Axel</td>
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<td>Lars</td>
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<td>Industrifonden</td>
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Grateful appreciation is offered to all the interview respondents who graciously shared their time and thoughts.

A special debt of gratitude is offered to Liesbet Peeters, without whose support the depth of interviews and analysis would have been impossible.
## Appendix B: Europe’s “New” Markets

### European "New" Markets*

<table>
<thead>
<tr>
<th>Country</th>
<th>Market</th>
<th>31-Dec-02</th>
<th>31-Dec-03</th>
<th>Total Market Cap</th>
<th>Avg. Market Cap per Company</th>
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<td>31-Dec-03 (Sm)</td>
<td>31-Dec-02 (Sm)</td>
<td>31-Dec-03 (Sm)</td>
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<td>11</td>
<td>4,700</td>
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<td>10,580</td>
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<td>280</td>
<td>390</td>
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<td>Equity)</td>
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<td>16</td>
<td>320</td>
<td>350</td>
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<td>New Economy Market</td>
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<td>–</td>
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<tr>
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<td>Alternative Investment Market</td>
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<td></td>
<td>(AIM)</td>
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<td>OFEX</td>
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<td>158</td>
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<td>1,344</td>
<td>52,680</td>
<td>81,400</td>
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* Source: Global New Markets Guide 2004, Grant Thornton
## Appendix C: Europe/US: Main Markets

### European Main Markets*

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<tr>
<th>Country</th>
<th>Market operator</th>
<th>Number of Companies Listed</th>
<th>Total Market Cap</th>
<th>Avg. Market Cap per Company</th>
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<tbody>
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<td>31-Dec-02</td>
<td>31-Dec-03</td>
<td>31 Dec 02 (SB)</td>
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<td>Copenhagen Stock Exchange</td>
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<td>104</td>
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<td>Deutsche Börse</td>
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<td>829</td>
<td>690</td>
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<td>Greece</td>
<td>Athens Exchange</td>
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<td>228</td>
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<td>Italy</td>
<td>Borsa Italiana</td>
<td>231</td>
<td>219</td>
<td>470</td>
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<td>1,995</td>
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<td>Stockholmsbörsen</td>
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<td>200</td>
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<td>SWX Swiss Exchange</td>
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<td>289</td>
<td>550</td>
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<td>London Stock Exchange</td>
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### U.S. Markets*

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<td>6,090</td>
<td>11,597</td>
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*Source: Global New Markets Guide 2004, Grant Thornton
### Appendix D: Europe vs. US Venture Capital: 2003 Investment Profiles

<table>
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<th>Stage</th>
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<th>Amount of Investments (€ x 1,000)</th>
<th>Amount of Investments ($ x 1,000)†</th>
<th>%</th>
<th>Number of Investments</th>
<th>Avg. Investment (€ x 1,000)</th>
<th>$ Ratio: US/Europe</th>
<th>%</th>
<th>Number of Companies</th>
<th>Avg. Investment ($ x 1,000)</th>
<th>%</th>
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<tbody>
<tr>
<td>Seed</td>
<td>€ 165,045</td>
<td>$ 196,404</td>
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<td>377</td>
<td>$ 521</td>
<td>4.5%</td>
<td>334</td>
<td>4.5%</td>
<td>588</td>
<td>$ 588</td>
<td>5.3%</td>
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<tr>
<td>Start-up</td>
<td>€ 1,974,248</td>
<td>$ 2,349,355</td>
<td>23.6%</td>
<td>3,229</td>
<td>$ 728</td>
<td>38.4%</td>
<td>2,372</td>
<td>38.4%</td>
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<td>$ 990</td>
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<td>4,793</td>
<td>$ 1,549</td>
<td>57.1%</td>
<td>3,649</td>
<td>57.1%</td>
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<td>Totals/Avg.</td>
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<td>$ 1,569</td>
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<td>Start-up</td>
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<td>$ 7,804</td>
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<tr>
<td>Totals/Avg.</td>
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<td>6,792</td>
<td>$ 6,792</td>
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* Source: EVCA Yearbook 2004
** Source: PricewaterhouseCoopers/Thomson Venture Economics/NVCA MoneyTree Survey 2004
† Exchange Rate: $/€ = 1.19