Philosophies of Angel Investing

A Whitepaper by Rick Norland

Rick Norland is the founding partner of Thorington Corporation, an Ottawa firm focused on co-founding emerging, advanced-technology companies. He holds an MBA from the Richard Ivey School of Business, is a Professional Engineer and Chartered Business Valuator.

A. Prologue – A Word About The Author

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B. Introduction – Why a Locally-based Approach?

Angels are an important source of capital for many new startups, often bridging the gap between "love money" and venture capital financing or the public markets. With the recent attention to and greater sophistication of Angels, this capital market tier is changing considerably. In Ottawa, many people have benefited from stock option plans and have become Angels. As well, the recent flurry of quality startups essentially ignored Angels as a funding source. The current situation of lower valuations, smaller issue sizes, and demanding venture capitalists will likely change that – but only temporarily. Hence, Angel investors are likely to remain an important and evolving tier of the capital markets that support small companies.

As an underlying principle to the philosophies in this whitepaper, it is imperative that one thoroughly understand the local economy and apply these philosophies to that local landscape. Why is that important? Angel investors normally only invest "close to home", within, say, a 100 kilometer radius of their home or office. Most Angel investors want to be able to monitor their investees frequently. For the same geographic restrictions, newly founded companies must rely on their local Angel community for investment – it is unlikely that non-local Angels will invest. With these realities, the investment opportunities for Angels and the types of Angels that can consider them will differ by region.

There are many facets to understanding the local landscape. What industries are investment opportunities likely to be in? What kind of growth prospects do they face? What kind of "ecosystem" will the investee need to be strong?

In addition to these more specific elements, there are a number of more general ones that also must be understood. For example, what kinds of Angels are there?

C. Understanding The Angel Community

1. The Challenge in Attracting Angel Investment

Intuitively, there is a certain "elasticity" to the number of Angels one must approach to close a deal. With the average Angel investing, say, $50,000 per deal, a good quality company likely has to approach ten Angels for each one that says "yes". Alternatively, about twenty Angels must be approached to find one who is interested to invest $150,000 or more in a given investment opportunity. Using these "funnel" numbers, a company raising $500,000 must approach 70 to 90 Angels to attract the necessary commitments.

As a function of these "funnel" realities, Angels can usually be counted on for issue sizes of up to only $500,000, with declining probabilities beyond that. For issue sizes over $750,000, it gets to be very difficult to find the interested Angels to meet the issue size – market efficiency begins to wane rapidly. Over $1 million in issue size, it's almost impossible to get a deal done with Angels alone and syndicates usually require other investor types in the group.

Interestingly, there are more than enough Angels to do these smaller deals. The difficulties come in trying to find them. This poor "market efficiency" is a reflection of the anonymity to the "outside world" that most Angels prefer. By contrast, personal research indicates that Angels desire more exposure within the Angel community itself (and only there). Essentially, many Angels complain of having "lost" deals because they could not interest enough "friend" Angels to complete a syndicate (they don't normally invest alone). Equally, they welcome the opportunity to share experiences and views with other Angels.

While it may seem intuitively simple to build an Angel network to foster inter-community ties, most Angels would shun any outsider (i.e. non-Angel) involvement. Network building can only be done by “one of their own”.

2. Profile of the Angel Investor

Assuming an interest in VC Path opportunities (see below), Angels expect between a 40% and 60% annual return on their investment and are often willing to actively help the entrepreneur build his business.

The commonly regarded profile of an Angel is:

- 50 year old male;
- Well-educated, professional;
- Self-made success;
- High-risk taker;
- Net worth over $1 million;
- Annual income over $100,000

3. Angels and Portfolio Management Strategy

As a rule, Angels are sophisticated investors that invest in a number of alternative investment vehicles. Private company investments typically represent 10% to 20% of their overall investment portfolio. Typically, Angel investors also have holdings in the public stock market, fixed income investments (e.g. GICs), real estate, and collectibles. Having this mix of investment interests can make Angels different from other private company investors. Most venture capital investors are uniquely interested in a company’s equity return prospects only. Expanding, most VCs are not interested in fixed income investment opportunities (except as a means to otherwise mitigate equity risk – still their primary interest).

Understanding that Angels consider a portfolio approach to their investment process can be important. For example, the sudden decline in public stock prices in 2001 likely had a negative impact on the net worth of many Angels. If they are comfortable with private company investments constituting a small portion of their overall portfolio, the rapid public market declines may effectively remove these Angels from the investment activity until stock market prices improve and “right” their portfolio asset allocation mix.

A second important portfolio management element to appreciate is to understand that Angels may be open to non-equity investments. For example, Angel monies that are allocated to second mortgages (garnering an interest rate of, say, 14%) may be allocable toward a private company’s subordinated debentures. The realization that Angels have a broader interest than simply equity makes them a different type of investor than a venture capitalist.

4. Classifying Angels

a. Overview

As with any class of investor, there are many types of Angel investors. Broadly, they can be classified by their level of investee involvement and the type of expertise they can offer an investee. As will be discussed below, the proportion of Angels within each classification will vary by local economy.

b. Classification 1: Active versus Passive, and Near Angels

Active Angels are those who choose to spend time with investees after the deal is done. What they do and how they do it will depend on their areas of expertise, the nature of support they offer, and how much time they choose to spend. Active Angels normally "set aside" $250,000 or more for private company investments. Active Angels tend to prefer to make their own investment decisions, even when part of a co-investment syndicate. They are unlikely to invest in a fund, not wanting to let "someone else" make their investment decisions. Equally, these types of Angels are often the "lead" investors or champions in an Angel syndicate. Other Angels will often be attracted to their level of commitment (before and after a deal) and their due diligence contributions. Active Angels comprise about 15% to 20% of Ottawa's Angel community.

A unique subset of the Active Angels group is the Super Angels, who are comparable to venture capitalists. In Ottawa, this group would include Terry Mathews, Mike Potter, Rod Bryden, and Antoine Paquin. Individuals such as these have no real minimum investment. These Angels have invested modest amounts in friends' ventures. They have also invested millions in others. And while they have no standard return expectations, Super Angels clearly intend each investment to be profitable. By their nature, Super Angels have the financial staying power to support a company for many years and to participate in even larger issue sizes. Super Angels are also capable of providing important mentorship to their investee companies, including a wide base of industry contacts and market clout.

Passive Angels essentially provide their capital to a deal and monitor its "progress" from a distance. Generally, these types of investors are gainfully employed in other occupations that preclude them from spending a lot of time with their investees, even if they could otherwise make significant contributions. Lacking the time or ability to help an investee, Passive Angels tend to be more risk averse than Active Angels. While they may avoid opportunities where greater due diligence is required (say, for a new technology), Passive Angels are also more likely to appreciate the due diligence and/or involvement of a trusted third party (e.g. an Active Angel). Hence, Passive Angels tend to be the ones to "round out" a syndicate. As well, their risk aversion usually translates into a desire to invest smaller dollar amounts per transaction than Active Angels (i.e. they pursue more of a “Sprinkle and Sprout” investment approach – see below).

In addition to the Active Angels and Passive Angels, there is another group that is noteworthy. This group is the Near Angels, those individuals that have the financial wherewithal and the interest to invest in private companies, but don’t – for a myriad of reasons (e.g. time required for due diligence and mentorship). This group is estimated to be as large as that of the Active and Passive Angels combined. In particular, this group is more likely to be interested in fixed income investment structures – an appeal to their risk aversions.

c. Classification 2: Value-Add

Essentially, there are three types of added value that an Angel can bring to an investee:

(1) Domain expertise

Angels that have had prior exposure to an investee’s industry can offer considerable help to a company specific to that industry. Examples include market knowledge, customer contacts, and senior staff recruiting. Most Active Angels are also Domain Experts.

(2) Process expertise

Process expertise refers to an Angel’s knowledge of certain activity streams facing the investee. For example, the Angel may be familiar with the product development process, marketing and sales management, or the entire start up process. An Angel’s process expertise is often related to their prior working experience. An important opportunity to recognize here is that many lessons in start up experience from one sector are transferable as process expertise to another sector. For example, Ottawa’s life sciences sector is benefiting from Angels’ start up expertise from the city’s telecom sector.

(3) Financial expertise

There are some Angels whose most important value-add is the ability to attract future investors. These Angels tend to be the “thought leaders” among their peer-Angels and/or well-respected among other investor types (e.g. venture capitalists, corporate investors).

D. BACKGROUND – UNDERSTANDING COMPANY REQUIREMENTS

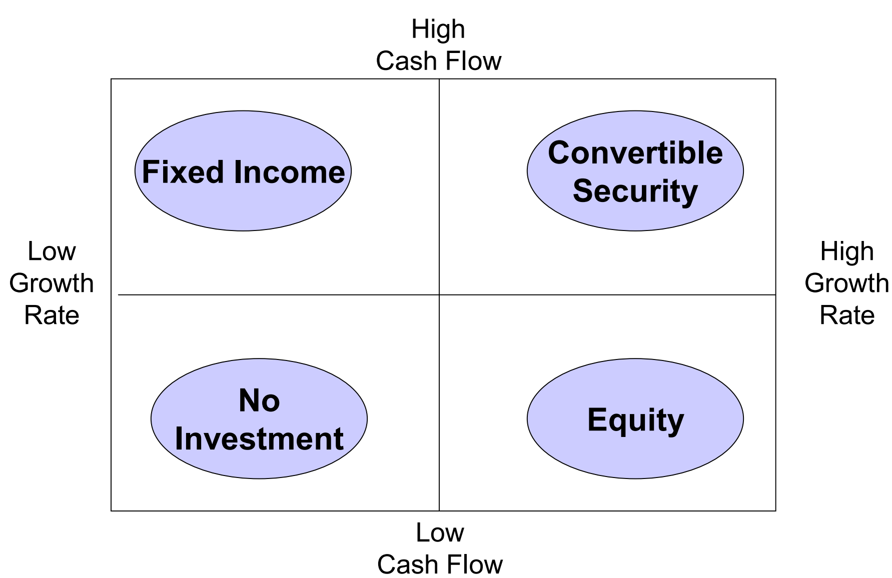
1. The "Financing Path" – Matching "Risk" and "Reward"

a. Overview

Angels' investment appetites are a function of their risk comfort, fully expecting also that their returns will be commensurate the risks they undertake. Seed Stage equity opportunities are likely the most risky alternative – hence attracting the highest reward expectation. Fixed income investments (e.g. subordinated debenture) have considerably less risk, and lower returns. Angels' comfort with different risks is a key determinant in their interest in different financing opportunities. Passive Angels who have little domain expertise are not likely to be interested in Seed Stage investment opportunities, especially without a "lead investor". Equally, Active Angels with domain or process expertise may be very interested in the higher returns of Seed Stage investment opportunities, preferring them to lower return alternatives.

Simply stated, the interest an Angel will have in different types of securities will depend on the expected profile of the underlying company's finances. This relationship is presented in Figure 1.

Figure 1: Matching Security Type to Company Finances



Opportunities can be categorized according to the type of investment profile they represent. Following is a brief introduction of four common types of investment opportunity that Angels consider – reflecting the risk/reward balance.

b. Type 1 – The VC Path

The VC Path refers to Seed Stage investment opportunities whose growth expectations will attract venture capital investment as the investee matures. Angels often have the opportunity to invest in these companies after the "love money" and before venture capital – at a point when the company is still many months from product commercialization. Obviously, investment at such an early stage involves considerable risk and is of interest primarily only to Active Angels. To offer the promise of significant rewards commensurate with their risk, these companies must be expected to grow significantly – and companies with significant growth expectations usually require VC funding to achieve them. Hence, these companies ought to reasonably be able to achieve revenues of $100 million some day (see The Economics of VC Investing, or Why Largess is Important). If those revenue expectations can't be expected, then the company is unlikely to get the funding it needs and Angels won't achieve the returns they need to justify their investment. In other words, unless a Seed Stage company is believed to be on the VC Path, it is unlikely to attract Angel funding. Investments in these opportunities are likely to be common shares.

c. Type 2 – The Next Tier Path

There are a number of companies that look like they are on the VC Path but fail to attract VC funding when required. As well, there are Seed Stage companies that are definitely "close" to being on the VC Path, with some uncertainty. To characterize these opportunities differently, VC's typically invest in only 2 of 100 deals they see. The Next Tier Path refers to numbers 3, 4 and 5 on the list of deals. They are likely still good investments, just not quite good enough to attract VC funding.

It is difficult to tell beforehand which Seed Stage deals are on the VC Path and which are on the Next Tier Path. Hence, the initial investment in both cases is likely to be common shares. Subsequent rounds though are likely to have a different structure, perhaps preferred shares or convertible debentures. In such structures, the Angels receive an annual cash return (dividends or interest) and participate in the capital gains of company growth.

d. Type 3 – Strong Cash Flow Path

There are many companies that will not achieve the growth expectations that VCs seek and, thus, will not be financed by them. For example, they may only reach annual revenues of $30 million. Some of these companies have businesses that will generate significant cash flows, even after tax. Examples include software companies or service companies. Companies on a Strong Cash Flow Path may offer compelling fixed income securities to prospective investors, offering annual cash returns and eventual liquidity in the form of principal repayment/redemption. Such securities may include subordinated debentures that may or may not also be convertible into equity. Normally, such securities are attractive only if the underlying company has already established early sales (say, $1 million to $3 million).

e. Type 4 – Early Liquidity Path

Another financial profile is the Early Liquidity Path. Companies on such a path are either likely acquisition targets or are candidates for an early IPO. Angels interested in these opportunities tend to be financial experts and Passive Angels.

f. Other Interesting Paths

There are other types of investment opportunities that may attract Angels (e.g. MBOs, LBOs, turnarounds, project financing). While such investment opportunities are often for more mature companies, their financial profile normally reflects one of the previous “paths”.

E. BACKGROUND – ELEMENTS OF THE VC “COMMON BODY OF KNOWLEDGE”

1. The Economics of VC Investing, or Why Largess is Important

It is commonly recognized that it is difficult for startup companies to attract VC funding. In fact, the rule of thumb is that VCs invest in only two percent of the deals they see. To understand why, it is necessary to understand how venture capitalists liquidate their investments.

Venture capitalists normally expect their investees to complete an IPO as a means to achieve investor liquidity. As significant shareholders at the IPO, many VCs will have their shares held in escrow until many months after the IPO date when the initial fanfare is over. Accordingly, VCs want their investees’ IPOs to be of a size that will support an “efficient and liquid market” to ensure a successful trading environment that they can sell into. With institutional investors making up 75% of the trading activity in Canada, a successful trading environment must include these investors. Institutional investors can invest millions at a time. Hence, the company must complete a larger IPO to be able to accommodate them.

Some rules of thumb. Most IPOs represent, say, 20% of an issuer’s outstanding shares. As well, a “successful” IPO should be at least $25 million. By extension, the issuing company ought to be worth $100 million or more at the IPO date. With typical P/E multiples for IPO companies being, say, 15x to 20x, the issuer ought to have after-tax profits of $5 million to $7 million. Assuming the company has even a 10% net margin (normally margins are much lower), the revenues

Angel Investing – The Local Landscape

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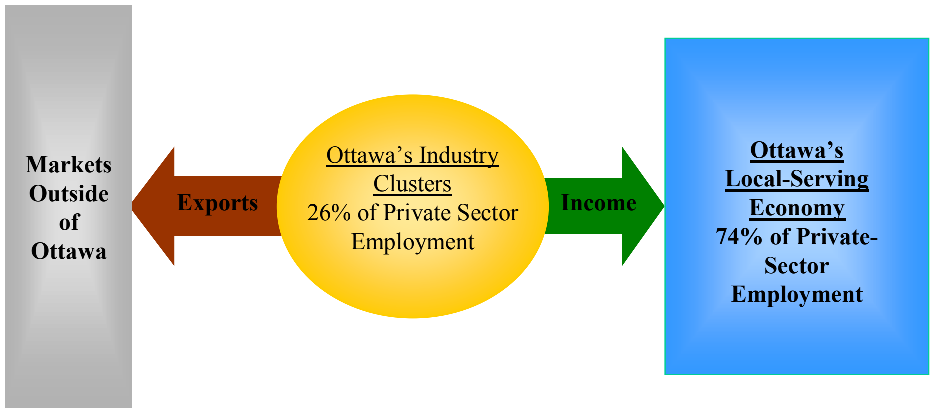
C. DEVELOPING A LOCAL "INVESTMENT LANDSCAPE"

1. Understanding The Local Economy

Given that Angels typically invest "close to home", it is important to develop a local landscape that "maps" the various types of investment opportunities (see Appendix 1: Understanding Company Requirements) and the various types of Angels (see Appendix 2: Understanding The Angel Community). The same economic model can be used for both purposes.

As one such economic model, consider the process pursued by Ottawa in 1999/2000. Ottawa undertook a review of its local economy and explored, in some detail, its many businesses, the various regional research facilities, and the "efficiency" of the various levels of regional capital markets (e.g. Angel investors, venture capitalists, public markets), among many other areas.

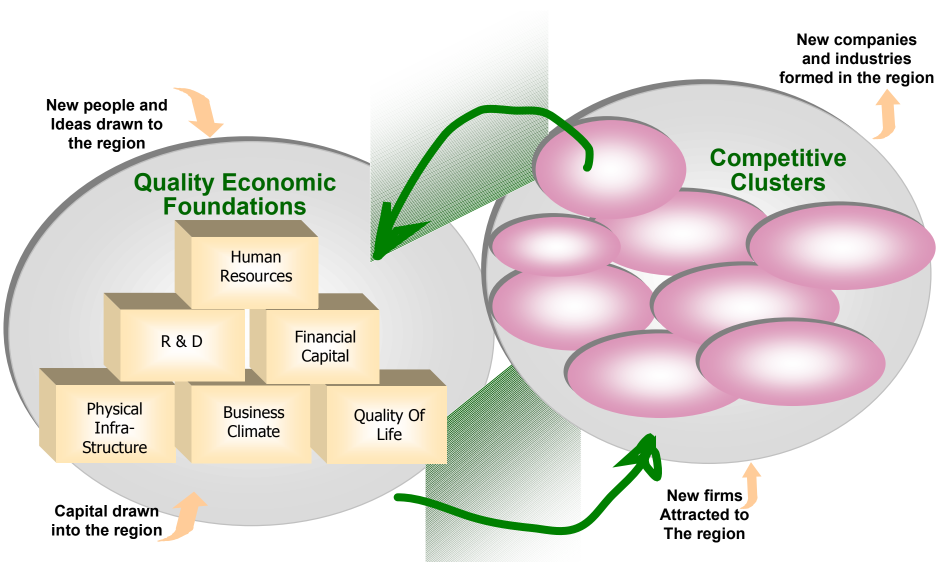
Figure 1: Understanding the Base Strengths of Ottawa's Economy



Source: ICF Consulting, Economic Generators Initiative, January 2000

The findings of that initial research are shown in Figure 1, indicating that 26% of the regional employment was in businesses could be grouped into "clusters" and that those clusters were the primary drivers of the whole regional economy. The remaining 74% of the region's economic activity was related to the support of those initial clusters.

Figure 2: Understanding the "Vital Cycle" - Ottawa's Economic Model



Source: ICF Consulting, Economic Generators Initiative, January 2000

The understanding of the Ottawa economy was further enhanced by using the "Vital Cycle" (shown in Figure 2) as a framework to map the various businesses, organizations, and initiatives. This framework explains how an economy must have strong "Foundations" to support and expand the economic activity of the

"Clusters" (the most impactful economic drivers) and, with a Multiplier Effect, the region as a whole. Essentially, these tools were applied to understand whether there is a "Vital Cycle" in Ottawa and where future economic development efforts could be applied to sustain or enhance the region's strengths.

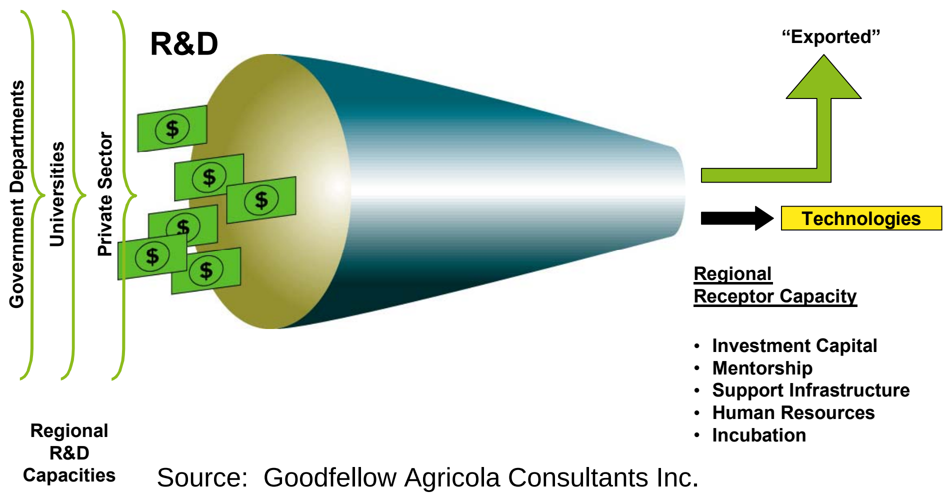
2. The Receptor Capacity and Company Creation Culture

One important element of a region's "investment landscape" is to understand its ability to generate "investment opportunities" and what kind. Consider that one quick test criteria for a venture capitalist is whether a prospective investee company is likely to achieve $100 million in sales ever. If not, the company is unlikely to achieve the size and valuation necessary for the venture capitalist to realize an adequate return on its investment and the company is unlikely to achieve the type of liquidity event (e.g. sizeable IPO) that the venture capitalist will need to exit.

Angel investors, often the first investors in a company, have a natural desire to invest in companies that they believe will later attract venture capital. Hence, the "$100 million sales" test is an important one in understanding a local investment landscape, for venture capitalists and Angels alike. Referring back to Figure 1, few regional economies are capable of sustaining a $100 million revenue base for a local company. In other words, venture capital companies are likely to be in the clusters, not among the Foundation companies.

By definition, venture capitalists only consider smaller companies that will grow and be successful in their market. To win in a market, the company usually needs to have an innovative solution or product. Hence, "innovation" in a cluster is an important indicator as to whether new company prospects are likely. One important measure of "innovation" is a region's base of research and development, in terms of infrastructure, people and research dollars.

Figure 3: Understanding the Region's Receptor Capacity



Source: Goodfellow Agricola Consultants Inc.

While "innovation" is important, company creation really relies on a region's ability to commercialize its research output, and to form and support the new companies, its "entrepreneurial culture" and support infrastructure. We refer to this measure as the cluster's "Receptor Capacity" (see Figure 3). There are a number of elements to a region's "Receptor Capacity." These include investment capital, mentorship, support infrastructure, human resources (both managerial and technical), and incubation experience. With an unsatisfactory Receptor Capacity, the region's R&D results (i.e. technologies and intellectual property) are more likely to be exported from the region to be commercialized in a more supportive environment.

Putting all this together, one of the key elements to understanding a local economy's investment landscape is to understand the base of innovation and Receptor Capacity in its clusters. Such an understanding will indicate the likelihood of quality investment opportunities in the clusters that may later attract venture capital funding. Innovation in non-cluster industries is not likely going to be able to be commercialized locally (inadequate infrastructure and critical mass) and is more likely to be "exported" elsewhere for commercialization (if at all).

3. What Types of Investment Opportunities are Likely and What Do They Need?

a. Assessing Investment Opportunity Flows

Unless the local economy is significant, most $100 million revenue companies are likely to be in one of the region's industry clusters (i.e. a company that accesses outside markets). Hence, most Seed Stage companies that are on the VC Path (i.e. are of interest to Angels) are likely to be in the clusters. Thus, an assessment of the local landscape requires an understanding as to whether new companies are being established in a cluster and what those companies need for success. For example, Ottawa's photonics cluster boasts a number of startups. Even with significant capital requirements, Ottawa's unique and global expertise in that segment attracts significant US VC. By contrast, Sarnia has a petrochemical cluster that is mainly comprised of branch plants. The significant capital requirements in that industry act as a deterrent for startup activity in that cluster.

Given that Angels will consider other investment paths, it is also important to understand the types of companies in the Foundation segments of the local economy. These segments will include service firms and product firms alike that support the clusters. In Sarnia's case, there may be many strong firms that sell products and services to the petrochemical cluster. In such cases, there may be many opportunities for fixed income types of Angel investments.

Essentially, the process of mapping the local landscape's investment opportunities requires one to understand the Cluster and Foundation infrastructure and intuitively apply Figure 4: Matching Security Type to Company Finances to discern what types of investment opportunities are likely to exist.

b. What is Required For Investees' Success?

Growing a Seed Stage company can be extremely complex, especially from Canada when the primary market is in the US. There are many challenges in trying to finalize the product, staffing a firm that is doubling its work force every year, understanding and convincing customers to take a chance on a new technology, and managing a sales presence in another country. Further complicating the tasks is the realization that start up companies need to establish and maintain a First Mover Advantage, or run the risk of losing a market opportunity. And, company growth requires attracting several rounds of equity capital - often a full time job in itself.

Alternatively, well-established companies may need nothing more than expansion capital to build their presence.

As part of "mapping" a local market, it is important to include an assessment of the areas of expertise (in addition to capital) that the private companies require. Against this "demand" for expertise, an assessment of a region's Angel community ability to "supply" it is required. Obviously, the landscape would not be complete without an assessment of the region's non-Angel sources of expertise.

4. Understanding The Local Economy - Where Are the Angels From?

Using the same model as in Figure 2, one can "map" the various Angels that are likely to exist. From where are the region's high-income earners (i.e. sources of Angels) likely to originate (see Profile of the Angel Investor)? Among them, what types of expertise are they likely to have? Do those areas match what the companies need?

Active Angels tend to offer domain or process expertise. As well, they are usually the types of Angels required to support Seed Stage companies. Effectively, they are likely to come from cluster companies themselves. What is the ability of the cluster to generate wealthy individuals? Financial experts and Passive Angels are more likely to come from Foundation companies. Is the Angel pool likely to be more conservative (i.e. interested in fixed income securities)? Is there a preponderance of Active Angels (i.e. supportive of Seed Stage companies)? Is the Angel community likely to have an "appetite" for convertible securities?

It is also important to understand who the other investors are in the region. Are VCs active? If not, why not? Could they be enticed by the "right" Angel? Are corporate investors active?

D. CONCLUSION

With a mapping of the regional landscape, one can understand the types of investment opportunities that are likely to be prevalent and the likely Angels that may be interested in them. From an economic development perspective, one can then build on the efficiency of the Angel community by filling in some of the "gaps" (e.g. educating companies about fixed income securities alternatives) and removing some of the hurdles to Angel investing (e.g. assisting Angels with due diligence and mentoring).

Appendix 1: Understanding Company Requirements

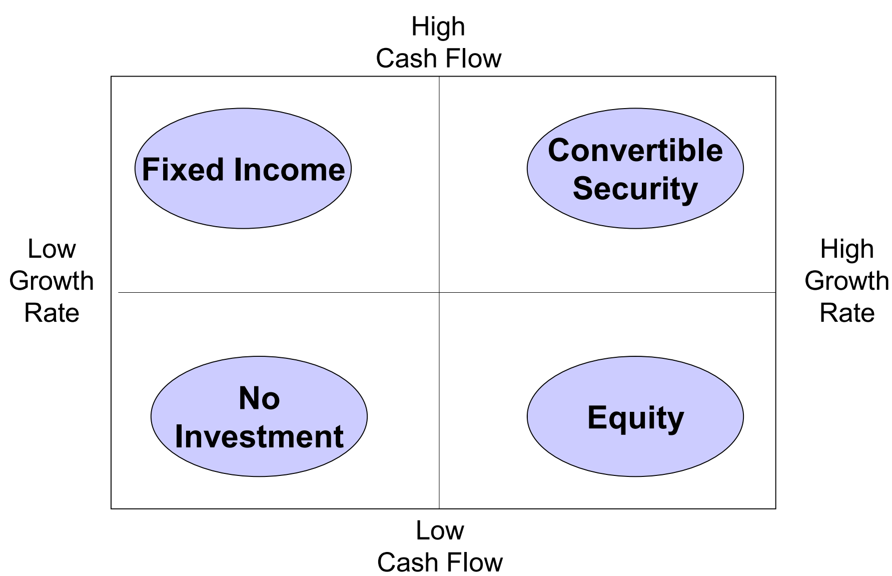
A. THE "FINANCING PATH" – MATCHING "RISK" AND "REWARD"

1. Overview

Angels' investment appetites are a function of their risk comfort, fully expecting also that their returns will be commensurate the risks they undertake. Seed Stage equity opportunities are likely the most risky alternative – hence attracting the highest reward expectation. Fixed income investments (e.g. subordinated debenture) have considerably less risk, and lower returns. Angels' comfort with different risks is a key determinant in their interest in different financing opportunities. Passive Angels who have little domain expertise are not likely to be interested in Seed Stage investment opportunities, especially without a "lead investor". Equally, Active Angels with domain or process expertise may be very interested in the higher returns of Seed Stage investment opportunities, preferring them to lower return alternatives.

Simply stated, the interest an Angel will have in different types of securities will depend on the expected profile of the underlying company's finances. This relationship is presented in Figure 4.

Figure 4: Matching Security Type to Company Finances



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2. Type 1 – The VC Path

The VC Path refers to Seed Stage investment opportunities whose growth expectations will attract venture capital investment as the investee matures. Angels often have the opportunity to invest in these companies after the "love money" and before venture capital – at a point when the company is still many months from product commercialization. Obviously, investment at such an early stage involves considerable risk and is of interest primarily only to Active Angels. To offer the promise of significant rewards commensurate with their risk, these companies must be expected to grow significantly – and companies with significant growth expectations usually require VC funding to achieve them. Hence, these companies ought to reasonably be able to achieve revenues of $100 million some day. If those revenue expectations can't be expected, then the company is unlikely to get the funding it needs and Angels won't achieve the returns they need to justify their investment. In other words, unless a Seed Stage company is believed to be on the VC Path, it is unlikely to attract Angel funding. Investments in these opportunities are likely to be common shares.

3. Type 2 – The Next Tier Path

There are a number of companies that look like they are on the VC Path but fail to attract VC funding when required. As well, there are Seed Stage companies that are definitely "close" to being on the VC Path, with some uncertainty. To characterize these opportunities differently, VC's typically invest in only 2 of 100 deals they see. The Next Tier Path refers to numbers 3, 4 and 5 on the list of deals. They are likely still good investments, just not quite good enough to attract VC funding.

It is difficult to tell beforehand which Seed Stage deals are on the VC Path and which are on the Next Tier Path. Hence, the initial investment in both cases is likely to be common shares. Subsequent rounds though are likely to have a different structure, perhaps preferred shares or convertible debentures. In such structures, the Angels receive an annual cash return (dividends or interest) and participate in the capital gains of company growth.

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5. Type 4 – Early Liquidity Path

Another financial profile is the Early Liquidity Path. Companies on such a path are either likely acquisition targets or are candidates for an early IPO. Angels interested in these opportunities tend to be financial experts and Passive Angels.

6. Other Interesting Paths

There are other types of investment opportunities that may attract Angels (e.g. MBOs, LBOs, turnarounds, project financing). While such investment opportunities are often for more mature companies, their financial profile normally reflects one of the previous “paths”.

Appendix 2: Understanding The Angel Community

A. THE CHALLENGE IN ATTRACTING ANGEL INVESTMENT

Intuitively, there is a certain “elasticity” to the number of Angels one must approach to close a deal. With the average Angel investing, say, $50,000 per deal, a good quality company likely has to approach ten Angels for each one that says “yes”. Alternatively, about twenty Angels must be approached to find one who is interested to invest $150,000 or more in a given investment opportunity. Using these “funnel” numbers, a company raising $500,000 must approach 70 to 90 Angels to attract the necessary commitments.

As a function of these “funnel” realities, Angels can usually be counted on for issue sizes of up to only $500,000, with declining probabilities beyond that. For issue sizes over $750,000, it gets to be very difficult to find the interested Angels to meet the issue size – market efficiency begins to wane rapidly. Over $1 million in issue size, it’s almost impossible to get a deal done with Angels alone and syndicates usually require other investor types in the group.

Interestingly, there are more than enough Angels to do these smaller deals. The difficulties come in trying to find them. This poor “market efficiency” is a reflection of the anonymity to the “outside world” that most Angels prefer. By contrast, personal research indicates that Angels desire more exposure within the Angel community itself (and only there). Essentially, many Angels complain of having “lost” deals because they could not interest enough “friend” Angels to complete a syndicate (they don’t normally invest alone). Equally, they welcome the opportunity to share experiences and views with other Angels.

While it may seem intuitively simple to build an Angel network to foster inter-community ties, most Angels would shun any outsider (i.e. non-Angel) involvement. Network building can only be done by “one of their own”.

B. PROFILE OF THE ANGEL INVESTOR

Assuming an interest in VC Path opportunities (see below), Angels expect between a 40% and 60% annual return on their investment and are often willing to actively help the entrepreneur build his business.

The commonly regarded profile of an Angel is:
- 50 year old male;
- Well-educated, professional;
- Self-made success;
- High-risk taker;
- Net worth over $1 million;

- Annual income over $100,000

C. ANGELS AND PORTFOLIO MANAGEMENT STRATEGY

As a rule, Angels are sophisticated investors that invest in a number of alternative investment vehicles. Private company investments typically represent 10% to 20% of their overall investment portfolio. Typically, Angel investors also have holdings in the public stock market, fixed income investments (e.g. GICs), real estate, and collectibles. Having this mix of investment interests can make Angels different from other private company investors. Most venture capital investors are uniquely interested in a company's equity return prospects only. Expanding, most VCs are not interested in fixed income investment opportunities (except as a means to otherwise mitigate equity risk – still their primary interest).

Understanding that Angels consider a portfolio approach to their investment process can be important. For example, the sudden decline in public stock prices in 2001 had a negative impact on the net worth of many Angels. If they are comfortable with private company investments constituting a small portion of their overall portfolio, the rapid public market declines may effectively remove these Angels from the investment activity until stock market prices improve and "right" their portfolio asset allocation mix.

A second important portfolio management element to appreciate is to understand that Angels may be open to non-equity investments. For example, Angel monies that are allocated to second mortgages (garnering an interest rate of, say, 14%) may be allocable toward a private company's subordinated debentures. The realization that Angels have a broader interest than simply equity makes them a different type of investor than a venture capitalist.

D. CLASSIFYING ANGELS

1. Overview

As with any class of investor, there are many types of Angel investors. Broadly, they can be classified by their level of investee involvement and the type of expertise they can offer an investee. As will be discussed below, the proportion of Angels within each classification will vary by local economy.

2. Classification 1: Active versus Passive, and Near Angels

Active Angels are those who choose to spend time with investees after the deal is done. What they do and how they do it will depend on their areas of expertise, the nature of support they offer, and how much time they choose to spend. Active Angels normally "set aside" $250,000 or more for private company investments. Active Angels tend to prefer to make their own investment decisions, even when part of a co-investment syndicate. They are unlikely to invest in a fund, not wanting to let "someone else" make their investment decisions. Equally, these types of Angels are often the "lead" investors or champions in an Angel syndicate. Other Angels will often be attracted to their level of commitment (before and after a deal) and their due diligence contributions. Active Angels comprise about 15% to 20% of Ottawa's Angel community.

A unique subset of the Active Angels group is the Super Angels, who are comparable to venture capitalists. In Ottawa, this group would include Terry Mathews, Mike Potter, Rod Bryden, and Antoine Paquin. Individuals such as these have no real minimum investment. These Angels have invested modest amounts in friends' ventures. They have also invested millions in others. And while they have no standard return expectations, Super Angels clearly intend each investment to be profitable. By their nature, Super Angels have the financial staying power to support a company for many years and to participate in even larger issue sizes. Super Angels are also capable of providing important mentorship to their investee companies, including a wide base of industry contacts and market clout.

Passive Angels essentially provide their capital to a deal and monitor its "progress" from a distance. Generally, these types of investors are gainfully employed in other occupations that preclude them from spending a lot of time with their investees, even if they could otherwise make significant contributions. Lacking the time or ability to help an investee, Passive Angels tend to be more risk averse than Active Angels. While they may avoid opportunities where greater due diligence is required (say, for a new technology), Passive Angels are also more likely to appreciate the due diligence and/or involvement of a trusted third party (e.g. an Active Angel). Hence, Passive Angels tend to be the ones to "round out" a syndicate. As well, their risk aversion usually translates into a desire to invest smaller dollar amounts per transaction than Active Angels (i.e. they pursue more of a "Sprinkle and Sprout" investment approach – see below).

In addition to the Active Angels and Passive Angels, there is another group that is noteworthy. This group is the Near Angels, those individuals that have the financial wherewithal and the interest to invest in private companies, but don't – for a myriad of reasons (e.g. time required for due diligence and mentorship). This group is estimated to be as large as that of the Active and Passive Angels combined. In particular, this group is more likely to be interested in fixed income investment structures – an appeal to their risk aversions.

3. Classification 2: Value-Add

Essentially, there are three types of added value that an Angel can bring to an investee:

a. Domain expertise

Angels that have had prior exposure to an investee's industry can offer considerable help to a company specific to that industry. Examples include market knowledge, customer contacts, and senior staff recruiting. Most Active Angels are also Domain Experts.

b. Process expertise

Process expertise refers to an Angel's knowledge of certain activity streams facing the investee. For example, the Angel may be familiar with the product development process, marketing and sales management, or the entire start up process. An Angel's process expertise is often related to their prior working experience. An important opportunity to recognize here is that many lessons in start up experience from one sector are transferable as process expertise to another sector. For example, Ottawa's life sciences sector is benefiting from Angels' start up expertise from the city's telecom sector.

c. Financial expertise

There are some Angels whose most important value-add is the ability to attract future investors. These Angels tend to be the "thought leaders" among their peer-Angels and/or well-respected among other investor types (e.g. venture capitalists, corporate investors).

would be $50 million to $70 million. Or alternatively, if the IPO is at 1x revenue, the issuing company should have annual revenues of $100 million. To summarize, it is only these more successful companies that can complete the type of IPO that VCs need to liquidate their investments. And by extension, VCs will only get into companies that are expected to achieve that growth.

For qualified entrepreneurs who are pursuing $100 million-plus opportunities, this means venture capital is readily available in today's environment. The capital required for such aggressive growth is well matched with the desire of venture capitalists to deploy larger amounts of capital into companies that have the potential for huge payoffs.

These economic realities explain why entrepreneurs trying to raise $300,000 to build a $15 million company find little interest from traditional venture capital firms. They may have good ideas that can build profitable businesses and put a Mercedes/Hummer in the garage/yard. The key issue, however, is scale. Professional venture capitalists simply cannot afford to invest their time in small deals that don't have the potential to become portfolio superstars.

2. Basic Investment Strategies

Venture capital investing is like raising a family: The amount of attention you can give each child is inversely proportional to the number of children you have. Within this intention to “mentor” investees, there are two fundamental approaches. The first, called the “*Sprinkle and Sprout Approach*” refers to the process whereby investors make a number of relatively smaller investments. Essentially, they “bookmark” their right to participate in future financings of the more promising opportunities – after they have a chance to see what companies “sprout”. The decision to participate in follow-on rounds is their decision alone. Research by ONSET Ventures suggests that fewer than 25% of the “sprinkled seeds” sprout successfully.

A second approach, called the “*Value Add Approach*”, is one in which the investor makes fewer and larger investments. In this approach, the investors mitigate any perceived risk by themselves offering domain and/or process expertise to the investees. Based again on ONSET Ventures research, they expect 75% of their investees to succeed. With more companies succeeding, each can achieve lower growth for the same overall portfolio performance. Alternatively, comparable successful growth by more companies in the portfolio will result in higher portfolio performance.

3. Investment Criteria – For Seed Stage VC Investors

Following is a list of investment criteria sought by many Seed Stage VCs. By extension, Angels seeking companies on the VC Path must follow the same criteria:

- Addressing a very large, global market (i.e. US$1 billion or more)
- Customers are experiencing "pain" from unsolved problem (i.e. market pull) - not just a "vitamin" (i.e. market push).
- Customers have budgets <u>today</u> to pay for solutions to that problem.

- Investee has a defensible plan to reach $100 million in revenue <u>some day</u>.
- Investee has a defensible plan to reach, say, $20 million in revenue in a 3 to 5 year timeframe.
- Investee will reach breakeven in, say, a 24 month timeframe.

- Investee's technology/product is disruptive, not just "evolutionary".
- Investee has a sustainable competitive advantage (e.g. patents), not just First Mover Advantage. Service provider models may be different.

- Investee is likely 18 months or more away from commercial product.
- Investee likely has an incomplete management team, with only real strengths in technical staff.

- Founders are open to an eventual "change of control".
- Founders are open to devolving management control to Board and/or new management team.
- Founders are likely committed to Investee, even under such changes in control.

4. Return Expectations

As investors, venture capitalists are expected to return profits to the institutional clients that invest in their funds. Successful venture capitalists understand two key realities: (1) To survive, they must at least triple the assets with which they have been entrusted during the life of their partnership; and (2) Given the risks involved in startup investing, a significant number of their portfolio companies will fail and be total write-offs.

There are a number of "rules of thumb" that VCs consider in assessing the return expectations of individual companies and of their overall portfolio. The first rule of thumb has to do with the relative mix of performance that individual companies will achieve. The general expectation is that, of ten investees, two will achieve a 10x return (high growth), three will achieve medium growth, three will have slow or no growth, and two will go bankrupt. These assumptions are shown as the "Mix" in Table 1.

Table 1: VC Portfolio Performance Expectations

	Mix	$ Multiple	5 Yr CAGR
High growth	15%	10x	111.47%
Medium growth	30%	5x to 10x	62.66%
Slow growth	25%	2x to 5x	36.78%
No growth	15%	1x	0.00%
Business fails	15%	-1x	-100.00%
Portfolio Average		**3x to 5x**	**30.00%**

An average VC portfolio will have 20 to 30 companies, each requiring $2 million to $3 million, for an overall portfolio size of approximately $70 million. It is more difficult to achieve the standard mix with fewer companies.

A second rule of thumb relates to the definitions of each growth profile. These are normally expressed as a multiple returned on the originally invested capital. To compensate for the write-offs in the mix and to maintain the portfolio's overall returns, the portfolio superstars have to be big winners - companies that create at least $50 to $100 million or more of market value. Lastly, the type of VC fund (i.e. Seed Stage, Later Stage, Expansion, etc.) will determine the number of years over which the growth rate must be sustained to meet the return expectations. In Table 1, the average investment life is shown to be five years (the Cumulative Average Growth Rate).

Obviously, VCs intend to maximize the returns they expect their fund to achieve, in part to ensure investors will support their efforts to raise other funds in the future. As a result, there must be a logical possibility for every portfolio investment to create at least $50 million of market value and to return five to 10 times the invested capital. That only a fraction actually do is function of normal market forces.

With these various expectations, the average VC portfolio return is 30%. Seed Stage VC funds normally expect higher returns of, say, 45%.

It is interesting to note that, according to research completed by Venture Economics in the US, Seed Stage funds offer the most predictable return (Table 2) – the lowest standard deviation. The research also pointed out that Seed Stage funds have the lowest Risk Coefficient, an indication that the funds' performance is less dependent on the fund manager than is the case for other classes of VC funds. The highest Risk Coefficient is for Early Stage funds. Intuitively, this research suggests that the performance of Seed Stage investments is almost "random".

Table 2: VC Fund Performance

Fund Type	Sample	Cum IRR[1]	Std Dev	Risk Coeff[2]
Seed	38	11.8%	9.5	0.8
Early	90	12.7%	17.8	1.4
Later Stage	29	20.1%	12.5	0.6
Balanced	228	11.2%	14.5	1.3
All Venture	385	12.3%	15.1	1.2

Source: Venture Economics research, 1995

NOTE: Being the norm, these "rules of thumb" are based on a Sprinkle and Sprout Approach. A Value Add Approach would likely yield a higher performing mix.

F. BACKGROUND – DIFFERENT INVESTMENT INSTRUMENTS

1. Overview of Quasi-Equity Instruments

a. General

Quasi-equity investments are intended to offer an all-in above average, risk adjusted rate of return, usually at the expense of security or liquidity. Each instrument's conversion or redemption privilege will reflect the intended use of the instrument and reflect the expected nature of the underlying company.

b. Convertible Debentures

Convertible debentures are usually offered to companies that are likely to grow considerably over a three to five year period, with some form of liquidity event (i.e. an initial public offering (IPO) or divestiture) occurring in that period. In such instances, the conversion of the debenture into shares of the company will allow the lender/investor to participate in the upside potential of the company's equity value. Hence, a portion of the all-in return is expected to come from the equity's capital appreciation between the debenture's conversion price and the ultimate liquidity value. As an example, a convertible debenture may have an interest rate coupon of, say, 8% per annum. The all-in annual return target may be 25%. If the debenture is convertible into common shares at a price of $2.00 per share, the shares would have to be worth $4.39 by the fifth year to generate the expected 17% annualized return from the equity. Combining the 17% equity return with the 8% interest rate would yield an overall return for the financial instrument of 25%.

[1] IRR reflects the "time value" of money, including when distributions were made to investors.
[2] Risk Coefficient = Standard Deviation / IRR

c. Subordinated Debentures

Subordinated debentures are normally suitable to companies with strong cash flows and that prefer not to have dilution to the equity holders. In the event of liquidation, subordinated debentures rank behind secured creditors (credit facilities) and unsecured creditors (e.g. trade payables), and other senior lenders (e.g. convertible debentures). Conversely, subordinated debentures rank ahead of all classes of equity. With this ranking, many lending institutions will consider subordinated debentures as equity for the purposes of calculating various Asset Ratios. The interest payment obligations are normally considered when lenders determine various cash flow ratios (e.g. Times Interest Earned) however.

Because they have a lower security position or ranking, subordinated debentures will command a higher interest rate. Given that they rank ahead of equity classes and have an annual return that is paid in cash, subordinated debentures typically command an interest rate that is somewhat less than equity rates of return. Combined, a typical range for the interest rates of a subordinated debenture is 12% to 17%.

2. Overview of Equity Instruments

a. Preferred Shares

Preferred shares are typically viewed as an "inexpensive" form of equity, rather than as a debt alternative. Preferred shares are the first class of shares to participate in any liquidation proceeds. As well, they may enjoy a dividend payment that returns cash annually. It is also typical that the preferred shares include a redemption privilege or a punitive conversion rate to common shares. These latter provisions are intended to allow the preferred shareholders the means to assume control of the company under certain (usually adverse) conditions.

b. Common Shares

Common shares rank last in the event of a company's liquidation. They do not typically enjoy any dividends or any other form of annual cash return. By contrast, common shareholders normally represent the largest single class of shareholders and, therefore, benefit the most from a company's capital appreciation.

c. Options and Warrants

Options and warrants normally allow the holder to purchase common shares in the future at a predetermined price. For a private company, it is not uncommon for lenders and investors of almost any other financial instrument to request warrants as a "sweetener" to a deal. Holders of these instruments may participate fully in the upside of a company's capital appreciation, without risking any capital until the outcome is certain (i.e. one would only exercise the option or warrant if the share price had increased).

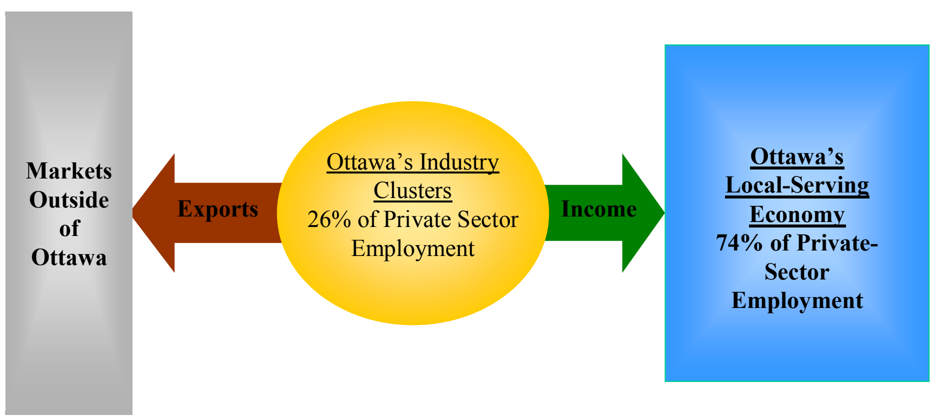
G. DEVELOPING A LOCAL LANDSCAPE

1. Understanding The Local Economy

Given that Angels typically invest "close to home", it is important to develop a local landscape that "maps" the various types of investment opportunities and the various types of Angels. The same economic model can be used for both purposes.

As one such economic model, consider the process pursued by Ottawa in 1999/2000. Ottawa undertook a review of its local economy and explored, in some detail, its many businesses, the various regional research facilities, and the "efficiency" of the various levels of regional capital markets (e.g. Angel investors, venture capitalists, public markets), among many other areas.

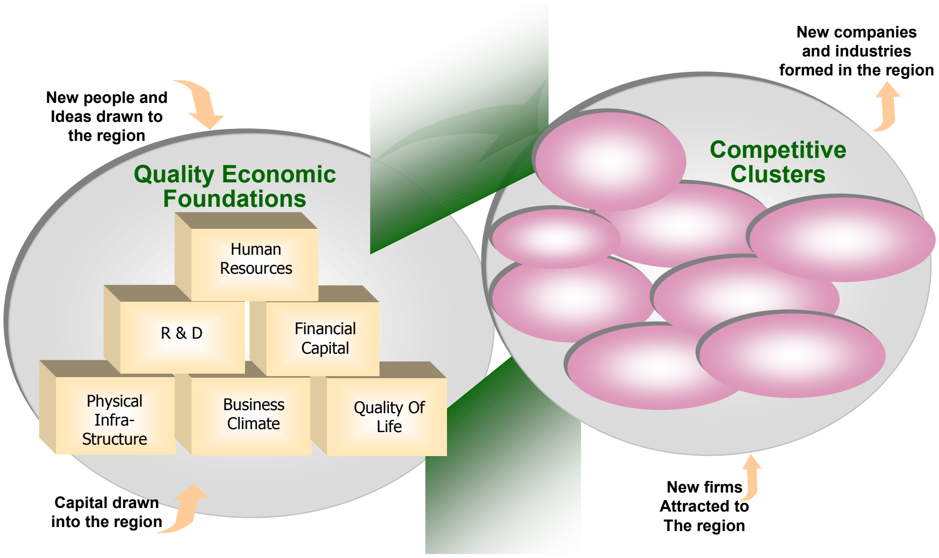
Figure 2: Understanding the Base Strengths of Ottawa's Economy



Source: ICF Consulting, Economic Generators Initiative, January 2000

The findings of that initial research are shown in Figure 2, indicating that 26% of the regional businesses could be grouped into "clusters" and that those clusters were the primary drivers of the whole regional economy. The remaining 74% of the region's economic activity was related to the support of those initial clusters.

Figure 3: Understanding the "Vital Cycle" - Ottawa's Economic Model



Source: ICF Consulting, Economic Generators Initiative, January 2000

The understanding of the Ottawa economy was further enhanced by using the "Vital Cycle" (shown in Figure 3) as a framework to map the various businesses, organizations, and initiatives. This framework explains how an economy must have strong "Foundations" to support and expand the economic activity of the "Clusters" (the most impactful economic drivers) and the region as a whole. Essentially, these tools were applied to understand whether there is a "Vital Cycle" in Ottawa and where future economic development efforts could be applied to sustain or enhance the region's strengths.

2. *What Types of Investment Opportunities are Likely and What Do They Need?*

a. Assessing Investment Opportunity Flows

Unless the local economy is significant, most $100 million revenue companies are likely to be in one of the region's industry clusters (i.e. a company that accesses outside markets). Hence, most Seed Stage companies that are on the VC Path (i.e. are of interest to Angels) are likely to be in the clusters. Thus, an assessment of the local landscape requires an understanding as to whether new companies are being established in a cluster and what those companies need for success. For example, Ottawa's photonics cluster boasts a number of startups. Even with significant capital requirements, Ottawa's unique and global expertise in that segment attracts significant US VC. By contrast, Sarnia has a petrochemical cluster that is mainly comprised of branch plants. The significant capital requirements in that industry act as a deterrent for startup activity in that cluster.

Given that Angels will consider other investment paths, it is also important to understand the types of companies in the Foundation segments of the local economy. These segments will include service firms and product firms alike that support the clusters. In Sarnia's case, there may be many strong firms that sell products and services to the petrochemical cluster. In such cases, there may be many opportunities for fixed income types of Angel investments.

Essentially, the process of mapping the local landscape's investment opportunities requires one to understand the Cluster and Foundation infrastructure and intuitively apply Figure 1: Matching Security Type to Company Finances to discern what types of investment opportunities are likely to exist.

b. What is Required For Investees' Success?

Growing a Seed Stage company can be extremely complex, especially from Canada when the primary market is in the US. There are many challenges in trying to finalize the product, staffing a firm that is doubling its work force every year, understanding and convincing customers to take a chance on a new technology, and managing a sales presence in another country. Further complicating the tasks is the realization that start up companies need to establish and maintain a First Mover Advantage, or run the risk of losing a market opportunity. And, company growth requires attracting several rounds of equity capital - often a full time job in itself.

Alternatively, well-established companies may need nothing more than expansion capital to build their presence.

As part of "mapping" a local market, it is important to include an assessment of the areas of expertise (in addition to capital) that the private companies require. Against this "demand" for expertise, an assessment of a region's Angel community ability to "supply" it is required. Obviously, the landscape would not be complete without an assessment of the region's non-Angel sources of expertise.

3. Understanding The Local Economy - Where Are the Angels From?

Using the same model as in Figure 3, one can "map" the various Angels that are likely to exist. From where are the region's high-income earners (i.e. sources of Angels) likely to originate (see Profile of the Angel Investor)? Among them, what types of expertise are they likely to have? Do those areas match what the companies need?

Active Angels tend to offer domain or process expertise. As well, they are usually the types of Angels required to support Seed Stage companies.

Effectively, they are likely to come from cluster companies themselves. What is the ability of the cluster to generate wealthy individuals? Financial experts and Passive Angels are more likely to come from Foundation companies. Is the Angel pool likely to be more conservative (i.e. interested in fixed income securities)? Is there a preponderance of Active Angels (i.e. supportive of Seed Stage companies)? Is the Angel community likely to have an "appetite" for convertible securities?

It is also important to understand who the other investors are in the region. Are VCs active? If not, why not? Could they be enticed by the "right" Angel? Are corporate investors active?

H. CONCLUSION

With a mapping of the regional landscape, one can understand the types of investment opportunities that are likely to be prevalent and the likely Angels that may be interested in them. From an economic development perspective, one can then build on the efficiency of the Angel community by filling in some of the "gaps" (e.g. educating companies about fixed income securities alternatives) and removing some of the hurdles to Angel investing (e.g. assisting Angels with due diligence and mentoring).

Angel Investing – Return Expectations

A Whitepaper by Rick Norland

Rick Norland is the founding partner of Thorington Corporation, an Ottawa firm focused on co-founding emerging, advanced-technology companies. He holds an MBA from the Richard Ivey School of Business, is a Professional Engineer and Chartered Business Valuator.

A. Prologue – A Word About The Author

Rick Norland has been a volunteer for over ten years supporting the Ottawa Economic Development Corporation's Entrepreneur and Business Development Unit. He has been part of numerous research and program development efforts to support Ottawa's Angel community. He has been part of over 60 financial transactions, ranging from $10,000 to $350 million. He has supported 13 startups, nine of which were VC-backed, five from the point of founding. Among the newly founded companies, he has co-founded three of them. He has been an Angel investor in six companies. Augmenting his primarily Ottawa-based experiences, Mr. Norland has followed with interest the Angel community research from other areas. He has also researched and prepared business plans for the creation of three different venture capital funds. The philosophies set out in this whitepaper are the culmination of this broad and varied background, and are the author's personal views. They have not otherwise been independently verified or researched.

B. Introduction

Recently, there has been a growing concern wondering why Angels experience lower portfolio returns than venture capital investors. I think it is worth exploring the "inverse" of that question - "Why should Angels expect to even match VC portfolio returns?", or "What returns should Angels expect?"

C. What Returns Do VCs Get?

In most situations, VCs expect a 5x to 7x return on their investment over a five-year period, representing a cumulative annual growth rate (CAGR) of between 38% and 48%. Clearly, not all investments realize returns in that range - some are lower and some are higher.

As investors, venture capitalists are expected to return profits to the institutional clients that invest in their funds. Successful venture capitalists understand two key realities: (1) To survive, they must at least triple the assets with which they have been entrusted during the life of their partnership; and (2) Given the risks involved in startup investing, a significant number of their portfolio companies will fail and be total write-offs.

There are a number of “rules of thumb” that VCs consider in assessing the return expectations of individual companies and of their overall portfolio. The first rule of thumb has to do with the relative mix (see Table 1) of performance that individual companies will achieve. The general expectation is that, of ten investees, two will achieve a 10x return (high growth), three will achieve medium growth, three will have slow or no growth, and two will go bankrupt.

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An average VC portfolio will have 20 to 30 companies, each requiring $2 million to $3 million, for an overall portfolio size of approximately $70 million. It is more difficult to achieve the standard mix with fewer companies.

A second rule of thumb relates to the definitions of each growth profile. These are normally expressed as a multiple returned on the originally invested capital. To compensate for the write-offs in the mix and to maintain the portfolio’s overall returns, the portfolio superstars have to be big winners - companies that create at least $50 to $100 million or more of market value. Lastly, the type of VC fund (i.e. Seed Stage, Later Stage, Expansion, etc.) will determine the number of years over which the growth rate must be sustained to meet the return expectations. In Table 1, the average investment life is shown to be five years (the Cumulative Average Growth Rate).

Obviously, VCs intend to maximize the returns they expect their fund to achieve, in part to ensure investors will support their efforts to raise other funds in the future. As a result, there must be a logical possibility for every portfolio investment to create at least $50 million of market value and to return five to 10 times the invested capital. That only a fraction actually do is function of normal market forces.

With these various expectations, the average VC portfolio return is 30%. Seed Stage VC funds normally expect higher returns of, say, 45%. As an investment class, venture capital portfolios will generate annual returns of between 35% and 45%.

D. A Look at Angels' Portfolios

Not all Angel-backed companies go on to attract venture capital (i.e. not all are on the "VC Path"). According to research by Alan Riding, only about 52% of Angel-backed companies go on to attract venture capital. In other words, only 52% of Angels' investments should expect returns that are comparable to those of VCs.

Let's not forget two other factors in this discussion though. Angels normally invest at least one round before VCs, presumably at a lower valuation. By "coming in sooner," Angels effectively assume greater risk and, as the saying goes, "higher risk, higher reward." If this is true, then Angels should expect a marginally higher return (about 40% to 50%) on the companies in their portfolios that have attracted venture capital.

But not all Angel-backed companies go on to attract venture capital. It seems intuitively obvious that, almost by definition, venture capital flows to the "riskiest" and highest return opportunities. The corollary seems to be that investments in non-VC Path companies will yield annual returns that are below 35% to 45% (otherwise VCs would choose them).

This would suggest that, on average, 42% of Angels' investments are in opportunities that generate annual returns below the typical VC portfolio. A weighted average calculation of the returns from VC-Path companies and other types of investments suggests that there is a structural reason why Angels' returns will always be below those of VCs. Alternatively, for Angels to have a higher return than for VC portfolios, 100% of the Angels investments would have be VC-Path companies.

This discussion becomes further complicated by the realization that VCs' returns are often given a higher priority to Angels' returns (hence, a higher probability) with the benefits of many common term sheet clauses, such as:

- Liquidation preferences
- "Pay-to-Play" provisions
- Anti-dilution provisions
- Redemption privileges
- Dividend privileges

The impact of such term sheet clauses is discussed elsewhere.

Background Frequently Asked Questions

A Series of Whitepapers by Rick Norland

Rick Norland is the founding partner of Thorington Corporation, an Ottawa firm focused on co-founding emerging, advanced-technology companies. He holds an MBA from the Richard Ivey School of Business, is a Professional Engineer and Chartered Business Valuator. His background is further detailed in Schedule A.

A. BACKGROUND CONCEPTS

1. "Value" versus "Price"

From the perspective of a professional business valuator, there is an important distinction between "value" and "price." The sale of shares to an Angel or venture capital investor seldom reflects "value" and normally reflects "price."

The official definition of Fair Market Value is "the highest price available in an open and unrestricted market between informed and prudent parties, acting at arm's length, and under no compulsion to act, expressed in terms of money or money's worth."

The official definition of Price is "the consideration paid in a negotiated open market transaction involving the purchase and sale of an asset."

More casually, "value" is what something is worth and "price" is what you get for it. Here are some of the reasons why the two results may be materially different:

- Fair Market Value is calculated in a "notional" market, while Price reflects the real world;
- Fair Market Value assumes equal negotiating ability between the parties, while Price is affected by different negotiating strengths;
- Fair Market Value assumes both parties have equal knowledge, while Price reflects differences in information or assumptions;
- Fair Market Value assumes there are no "special purchasers", while Price may reflect the influence of a purchaser that has a unique incentive;
- Fair Market Value assumes neither party is under compulsion to transact while, in reality, vendors are usually under some financial pressure to sell, and one or both parties are acting on emotion; and,

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- Fair Market Value assumes there are many buyers in the “notional market”, whereas in reality there are often only a few that often confer.

Notwithstanding this important distinction between “value” and “price,” most discussions on the topic inherently use the term “value” to refer to “price.” This whitepaper will follow that same practice. Just remember though, all discussions on value really refer to price – i.e. what you can get for your company, not what it is worth.

This is a particularly important distinction when discussing “valuations” for Seed Stage and Early Stage companies. With the higher risks inherent with these earlier stage companies, the valuation methodologies are much more subjective than the methodologies used for Later Stage companies.

2. Valuation Methodologies versus Research

A second important observation is that the valuation methodologies can be used to determine an “opening” price for future negotiation with investors. Those negotiations themselves will determine the final worth of the company. The pre-money value research in this whitepaper simply records where those negotiations have ended up historically. In essence, the research can be used as a “sanity check” on the valuation and negotiation results the company experiences.

B. TRENDS IN PRE-MONEY VALUATION

1. Overall Observations

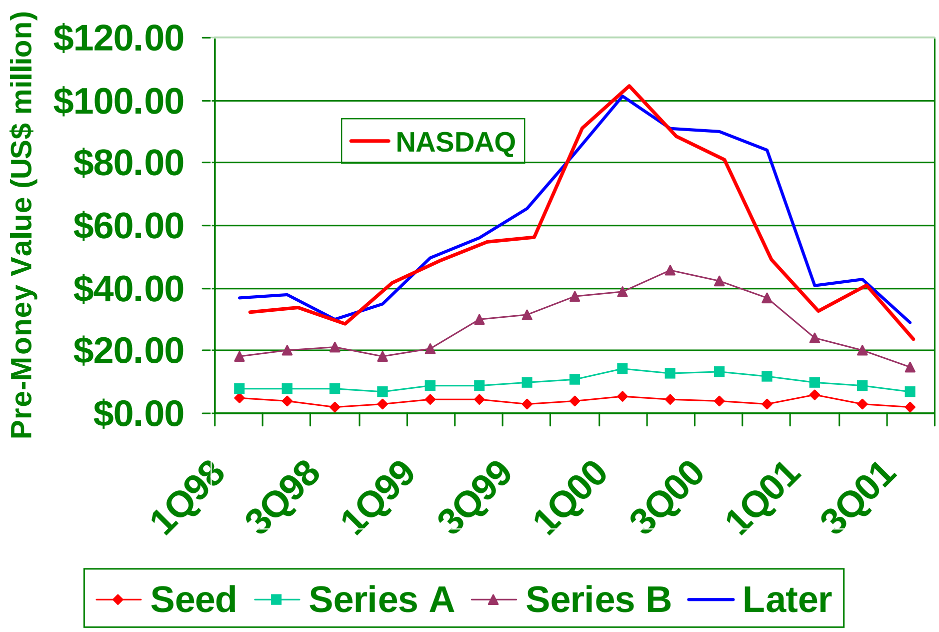
VentureOne Corporation has been tracking the US venture capital industry since the 1980s, reporting quarterly on industry performance. Figure 1 presents their findings respecting quarterly changes to pre-money valuations across the major venture capital investment classes (i.e. investee company maturity stages) during a period of considerable fluctuations to public market values, the period between Q1 1998 and Q3 2001. The NASDAQ performance is overlaid across the VentureOne research for comparative purposes. A few observations can be made:

- There is a very close tracking between changes in NASDAQ values and changes in Later Stage pre-money values, a reflection that these companies are “near” IPO status. Valuation methods for public companies and Later Stage companies are similar.
- As well, the further distanced company maturity is from IPO status, the less dependency there seems to be on changes to NASDAQ values. Seed

Stage pre-money values seem to be influenced by NASDAQ activity very little. Valuation methods for early stage companies are different from traditional methods used for public companies.

- As compared to Series B and Later Stage pre-money valuation trends, the pre-money valuations for Seed Stage and Series A Stage are relatively flat. Valuation methods for these very early stage companies result in a narrow band of valuation possibilities, regardless of external factors (e.g. market sentiment, economic performance).

Figure 1: Pre-Money Valuation Trends



Source: VentureOne Research

2. Valuation Approach Should Reflect Maturity Stage

There are a myriad of valuation approaches that can be employed to determine what a company is "worth." The choice of methodology should reflect the maturity stage of the company. Classical private company valuation methodologies are well suited to more mature companies that have sales, profits, and material assets. Seed Stage companies have none of that. Instead, they offer potential, balanced by considerable risk. Valuation assessments at this stage ought to reflect these challenges. Hence, different valuation approaches are used for different maturity stages.

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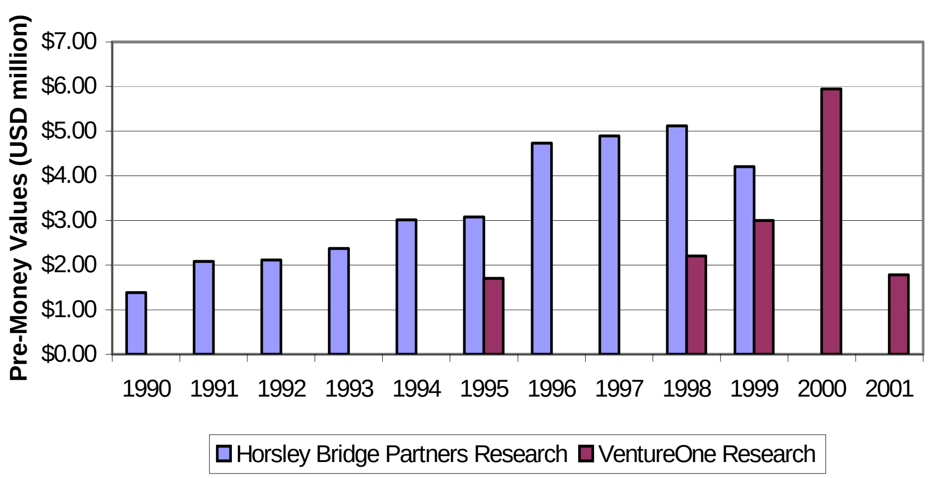
C. SEED STAGE PRE-MONEY VALUATIONS

1. Background

a. Seed Stage Pre-Money Valuation Trends

A longer period of pre-money valuations is shown in Figure 2, which combines the data of two respected venture capital industry "statisticians." The combined data present results between 1990 and 2001, unadjusted for inflation. The data indicates that Seed Stage pre-money valuations have fluctuated within a narrow band of between, say, US$2 million and US$5 million across more than ten years. This seeming stability contrasts some meaningful external market forces, such as a major recession, the "dot com" cycle, the "telecom meltdown", and a few major market "corrections."

Figure 2: Seed Stage Pre-Money Valuation Trends



b. Summary Observations

Data from VentureOne Corporation and Horsley Bridge Partners indicates that Seed Stage pre-money valuations are normally between US2 million and US$5 million. That same research also includes data on typical issue sizes, indicating that Seed Stage investors typically own 20% to 30% of the company's post-money fully diluted equity. The issue sizes are normally between US$500,000 and US$2 million.

Given the relatively few possible outcomes, Seed Stage investors typically use very simple valuation methodologies. Some of the reasons for a more simple approach include:

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- The final pre-money valuations will be within a narrow band and will be more affected by negotiating strengths than “mathematical” determinations – with such a narrow band of outcomes, why spend a lot of time on the process?
- Many Seed Stage investors recognize that much of the company’s business plan and product concept will likely change over the next few years. Why do considerable due diligence on aspects that may have no relevance to future value?
- With so much “uncertainty” and perceived risk, Seed Stage investors typically rely on more “intuitive” or subjective valuation models and support their subjective views with reality checks (i.e. due diligence) in a few key areas. Those key areas are typically the main value drivers to the Series A round.
- Seed Stage investors also recognize that, without a lot of substance in the companies upon which to do meaningful due diligence, they should be able to reach an intuitive assessment relatively quickly.
- Many Seed Stage investors recognize the “subjective” nature of their Seed Stage investment decisions and expect a high “mortality rate.” To offset this exposure, most Seed Stage investors are prepared to invest in one or two more financing rounds for the more promising investees.

c. Some “Data Points”

Here are a few “data points” supporting the above summary observations:

- **MIT Entrepreneurship Center**
  - Research Findings February 2000: Seed stage technology ventures were typically US$500,000 to US$3 million. Pre-money valuations greater than US$5 million required an extraordinarily compelling story.

- **The Tech Coast Angels**:
  - Website: “we look for pre-money valuations below US$5 million”
  - Presentation March 2002: "sweet spot" for investing is a pre-money valuation of US$1.5 million to US$3 million.

- **Sand Hill Angels**:
  - Website: invest US$250,000 to US$2 million at a valuation of less than US$5 million.

- **New Jersey Entrepreneurial Network Angels**:
  - Presentation: Valuation of US$1 million to US$5 million, for 20% to 30%

- **Winning Angels**, Amos/Stevenson (Noted Book):

– Most Angel investors want pre-money valuations between US$2 million and US$5 million, with US$2.5 million as the “sweet spot”

2. Seed Stage Valuation Approaches

a. Berkus Method

Dave Berkus has been an active Angel investor since 1993. Recognizing the necessity for simplicity at the Seed Stage, he developed a pre-money valuation methodology that focuses on the primary drivers for value increases between the Seed Stage and the Series A Stage. The approach, highlighted in Table 1, provides a valuation boundary for a subjective assessment in a few key areas.

Table 1: Berkus Valuation Method

Value Driver	Add to Company’s value
Sound idea	US$1 million
Prototype	US$1 million
Quality management team	US$1 million to US$2 million
Quality board	US$1 million
Product rollout or sales	US$1 million
Total potential value	US$1 million to US$6 million

Source: Dave Berkus 1993, reported by Amis/Stevenson, Winning Angels

b. Rule of “Development Milestone”

The more diligent investors will attempt to provide more “quantification” to their assessment of pre-money value. As one such attempt, some Seed Stage investors estimate the amount of cash required to achieve a major development milestone and, often without regard to how much that is, equate that amount to 50% to 60% of the company (post-money, full dilution).

c. Rule of “Thirds”

The Rule of “Thirds” simply implies that 1/3 of a new company’s equity should go to the Founders, 1/3 to management (i.e. an Option Pool), and 1/3 to the Seed Stage investors. This methodology is used most often as a “sanity check” to other valuation methodologies.

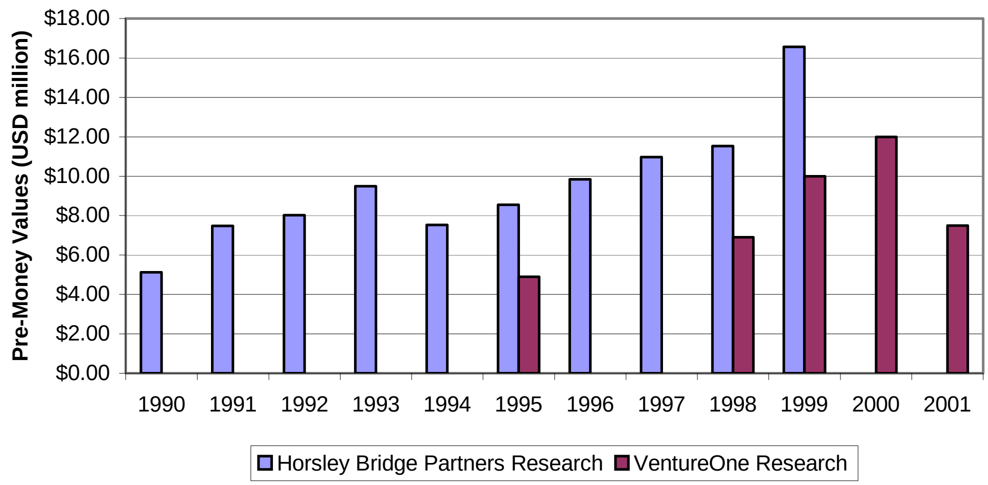
D. Series A Stage Valuation Approaches

1. Background

a. Series A Pre-Money Valuation Trends

Figure 3 similarly combines each source's pre-money valuation data for Series A financings, also over between 1990 and 2001. In that ten year period, these pre-money valuations have also remained relatively stable, fluctuating between, say, US$5 million and US$11 million. As with Seed Stage pre-money valuations, these one seem not to show much of an impact from external forces.

Figure 3: Series A Stage Pre-Money Valuation Trends



b. Summary Observations

This stage represents the "crossover" of valuation approaches. If the company is still "pre-revenue," a more simplistic approach is used as the primary methodology (e.g. Cash Out Approach). As the company gets nearer to a predictable revenue base, more "classical" approaches are used (e.g. First Chicago Method). Unlike the Seed Stage, Series A pre-money valuation efforts normally employ a number of approaches with the final valuation being based on the "grouping" of results. In this regard, Series A pre-money valuations include comparisons to similar transactions and, as a "sanity check", to public market results. These broader efforts notwithstanding, Series A pre-money valuations have still been between US$5 million and US$11 million for the past ten years.

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As another "rule of thumb," Fenwick & West LLP[1] reported in "Venture Capital – A Strategy for High Technology Companies" that the Series A share price should be perhaps 150% to 250% of the Seed Stage share price.

2. Series A Stage Valuation Approaches

a. Cash Out Approach

The Cash Out Approach focuses on the long term potential of an opportunity and essentially says, assuming all goes well, what do I have to invest at now to meet my return expectations. Its primary focus is on future potential. As a valuation method, therefore, it is most appropriate for earlier stage companies that still have considerable uncertainty. The process also requires the company to have significant potential growth and be in a market with many comparable liquidity comparables.

This approach starts with the future value of the company based on some expected liquidity event, say five years in the future. This value is then discounted back to a present value, with consideration for risk and future dilutions. A discount rate of 75% per annum would be normal. The resulting present value becomes the post-money valuation at this stage. Reducing this figure by the total investment currently sought yields the Series A pre-money valuation.

As an example, assume the company is expected to be worth US$150 million at a liquidity event in five years. The present value of that, assuming a 75% annual discount rate, is about US$9 million[2]. Assuming the company is currently looking for US$3.5 million, the Series A pre-money valuation would be US$5.5 million.

b. First Chicago Method

The First Chicago Method is a common approach among venture capital investors. The process essentially requires the venture capital investor to predict the company's current value under a range of scenarios and then applies a probability to each scenario to arrive at a weighted average pre-money valuation. An example is shown in Table 2 below.

[1] Fenwick & West LLP is a leading Silicon Valley law firm that has represented hundreds of growth-oriented companies from inception, many of which have become major public companies. It also represents institutional investors and venture capital firms and has been a leader in structuring new financing vehicles for startup companies.

[2] US$150 million / (1+.75)^5 = US$9.1 million

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Table 2: Example Using First Chicago Method

Scenario	Value (USD)	Probability	Weighted
Business a success	US$15 million	30%	US$4.5 million
Business a moderate success	US$10 million	30%	US$3.0 million
Business survives	US$5 million	30%	US$1.5 million
Business fails	Nil	10%	Nil
Total			US$9.0 million

c. Comparable Transactions

This methodology is also quite common. As a required element, this approach requires the company to be in a market with many recent transactions (financings and/or acquisitions). The results of the comparable transactions will be modified to be more "comparable" to the investee company. For example, the comparable may be adjusted to reflect differences in addressable market size or revenue potential. Other unique risks related to stage of maturity (e.g. status of IP development) or specific attributes (e.g. strong Founding team) will be factored in to the adjustments. To minimize the number of "discounts" for uncertainty, this approach is best suited to more mature Series A Stage companies.

E. SERIES B AND LATER STAGES VALUATION APPROACHES

1. Background

As shown above in Figure 1, the pre-money valuations for Series B Stage and Later Stage companies begin to reflect the external factors in the economy and capital markets generally. As well, these more mature companies have revenues and assets that facilitate the use of more classical valuation approaches. Generally, pre-money valuations of the less mature Series B Stage companies will be based on some of the approaches described for Series A Stage companies. The pre-money valuations of the more mature companies will use the methodologies described next. It is a normal practice that investors in these companies will employ a number of valuation methodologies and look for the valuation "grouping" in determining the share price. As well, most efforts will include a Comparable Transaction calculation.

2. Multiplier Methods

This approach is one of the more classical approaches. It includes the use of multiples for Revenue, Earnings Before Interest, Depreciation, Amortization and Taxes ("EBITDA"), Net Earnings, Book Value, among others. Clearly, the company must have a profitable operating history to justify the use of these

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approaches. As well, care must be taken to ensure that public market multiples, while often relevant, must be adjusted to reflect the company's private market status (often a 30% to 50% discount). The resulting determination is the post-money valuation from which one would deduct the investment amount to determine the pre-money valuation.

3. Discounted Cash Flow

The discounted cash flow valuation approach is reasonable well known. It is a financial calculation involving the concepts of recognizing each year's future value and then, using an appropriate annual discount rate (say, 25% to 50%), sum each year's "present value" to aggregate a value for the company. The resulting determination is the post-money valuation from which one would deduct the investment amount to determine the pre-money valuation.

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