Business Plan: Venture Capital via Web Psychometrics

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As the amount of investable capital available to an intermediary venture fund becomes larger, the cost of managing smaller investments becomes disproportionately cumbersome, hence the smaller dealmaking, already being disintermediated by "angel" investors, may be automated as a way of transferring venture capitalist experience to the "angel". There exist some websites matching investors and entrepreneurs based on mutual declarations, as well as groupware facilitating exchanges of financials, but venture capitalists repeatedly mention that the behavioral aspects ("Management, Management, Management") are the core of success. We intend, therefore, to automate or at least facilitate, these behavioral aspects of the process that now seem intangible. We believe behavioral (cognitive, psychometric) software is about to come of age, after several generations of partial successes, hence offering the enabling technology for automating the angel investor process. The core competency we intend to develop is expertise in psychometric managerial behavioral software that can be used in many other business models.

Once the framework for such a product is determined, a java psychometricians will be sought out as a founding partner to develop the software. Then we will seek to collaborate with some third world microcapital fund (either via the World Bank and the IMF or directly with an individual fund from microcapital.org) The third world experience will be used to train the principal component factor analysis and neural network system. We will also approach Community Development venture funds from cdva.org. Thereafter the system will be placed on some medical (eg MedScape) portal where doctors can fund ventures ia their own field. Also it will be marketed to universities so alumni can fund innovations discovered at their alma maters. Thereafter the software will be increasingly attractive for all sizes of funds. At such a point we will consider starting our own fund. Moreover, the experience of developing such software will be exploited to provide psychometric tools for other web-based telebusiness functions, eg project telemanagement. Eventually, if our methods become pervasive, everyday software may adjust itself to the personality of its user.

The aging population is flooding the investment market (though it may soon take it back) and investment firms find it tedious to pay attention to small investments. The sudden acknowledgement of pending retirement caused baby boomers to rush to invest in the 1990s, however, once they do retire, their duration matching will shift from equities to bonds [FourthTurning.com; Crain Investment News 9May5 Nobelate Wm Sharpe is studying retiree investment behavior; "Bad News Boomers Effect" 1Apr5 CNN Walter Updegrave] What this has done to venture capital, and indeed, all of private equity, is that with the amount of money available being so large, it is prohibitively inefficient to make small investments. Venture capitalists are paid a fee of 2% of the funds they manage and 20% of the profits. (In the finder world, smallness is compensated by the "Lehman formula": 5% 1st million, 4% next million.. 1% all increments above four million; if venture managers adopted such a formula, some, but not all, problems might be mitigated, but the cost would still be there.) Much of venture capital is parcelled out to venture funds by the like of pension funds, insurance firms and other "institutional" investors; General Electric Capital, geam.com is the largest manager of such funds or "assets", a list which includes GM's gmam.com.

Venture funding is a victim of its own success, leaving start-up entrepreneurs gasping for funds. Small deals aren't being done because there is too much money and managing small deals takes more work per dollar invested than big deals. The "angel" part of the financial system is highly unorganised. Moreover, angels are very amateurish and indeed have contributed to overpricing and exaggerated expectations. [VCJ, SDP 1Apr4, Tom Stein] The typical "angel" is a doctor, lawyer, engineer or accountant. Many times the "angel" has non-financial motivations. This is why venture capitalist business skills can be offered to this marketplace in the form of software, because venture capitalists consider it a waste of time to do themselves.

The major problem in ventures is behavioral: Management is too narrow and unwilling to collaborate with other specialisations necessary to make the venture succeed. [Gorman & Sahlman, HBS 9-288-015 1987 p11 Table 5; Rock, HBR 11/87 p63] VCs often need to round out the team [Kaplan & Stromberg, J Finance, 10/04 p2194] but a venture with an already rounded team will often get to retain more equity and control. A good entrepreneur has a high energry level, strong commitment, is just as hard on oneself as on others, [Rock, HBR, 11/87 p66] Perhaps they are also intuitive, competitive, risk-seeking, charismatic, impatient, multitasking [Landrum, 1993 p232 in Amis & Stevenson, Winning Angels, 2001 p86]. The successful deal [HBS 9-288-014 6/89 p43] accounts for incentives, provides for communication, information-flow, fairness and trust and is devoid of dysfunctional personalities. We also believe the successful entrepreneur is: forceful yet collaborative and delegating; patient yet dilligent and foresightful; committed yet flexible. Needless to say, honesty and integrity must also be tested for, but it is well known that paranoid personalities are the most difficult to detect. These are all things that can be tested for. The most common profiling scheme is the Myers-Briggs-Kiersey Temperament Indicators. Although we would like to further investigate, INTJ ENTJ ENTP scores are suggested for "Promethean Genius" in Landrum p232 from Amis & Stevenson Winning_Angels 2001 p86. The psychiatrist community uses DSM/MMPI scales. There is a degree of cultism in selecting framework and to overcome this, we will use existing tests as an initial guess and refine them by using principal component factor analysis and neural networks to exploit the experience of our system once it is running. All these can all be used to at least filter out the dysfunctional personalities unlikely to succeed, or to flag the personalities that need "extra work" and what that "extra work" is. Eventually the software might also compensate for individual entrepreneur and investor personality traits in facilitating the management of the investment.

As both a potential threat and partner, Netage ranks top. Most firms seem to concentrate on reporting issues and in fact do not just do venture capital, but more generally, private equity; Some have indeed shifted from VC to PE in order to exploit the similarities in accounting: So long as they focus on traditional MIS/IT and accounting roles (hemmed in by industry PEIGG.com, EVCA & BVCA guidelines for reporting between GP fund managers and LP investors), they will probably not notice the opprotunities discussed herein. Of course, there is no guaranty that those surveying mostly accounting-oriented software will even notice software with behavioral approaches. Netage and Relevant Equity [VCJ 4/03 p31 netagesolutions.com relevantequitysystems.com] offer venture capitalist management software from ten to three hundred thousand dollar software that include deal management, investor portal and portfolio company portal, fund-raising, and quarterly reporting. Netage is different, however, in that they do seem to think out of the box with their web portals for investors, entrepreneurs and limited partners as well as their deal pipeline. When it was difficult to compare client rosters, we tended to prefer conservatively listing total number of firms instead of actual licensed copies. Investran may also be a serious threat if they take notice, pending the outcome of the SunGard merger, and its many problems; yet their size makes them less likely to repornd to us in at competitively timely fashion. IntraLinks, through its innovative web-based VC client base is also an interesing threat, though they seem to focus on "data rooms" and PE Reporting and automated drawdowns, having come from the debt markets. It may be cynical, but so long as they allow themselves MIS/CPA blinders, our competitors will not notice this market until it is too late. We have been unable to contact AngelSoft, run by the head of NewYorkAngels.Com; their system is said to facilitate the transfer of financials between entrepreneurs and investors, and between syndicates of investors: This group would be innovative enough to partner with, but may also be blindered by the factors mentioned above or planning retaliation.

Competitor (from 4vco.com)	Str/Wkns	Threat/Opty	YrEst	Staff	Clients
AccountingFrameworks.Com	PE Acctg		1989	18	
MessageBaseSolutions.Co.UK	PE CRM				
NetageSolutions.Com	PE Report	Deal Pipeline	1998	60	130
RelevantEquitySystems.Com	PE Report		1989	34	170
Vantage-Reporting.Com	PE Integr	Seeks Ptrs	2001?		12?
VitechInc.Com	PE Report		1986	170	44
AnalytX.Com	PE Rport	ASP	1996	176	
BaxonPE.Com	PE Mgmt			15	14
Burgiss.Com	PE Report		1987	171	32
eFront.Co.UK	Invstr CRM	ASP	1999	38	31
eVenture.Co.UK	LoCost/Rpt	CRM Deal Log	1993	300?	10
Investran.Com/SunGard	PE Report	CRM Raimaker	1985	135	80
IntraLinks.Com	PE Report			250	150
Landsteinar.Je	PE Report	OffshorFunds	1997	22	18

LEGEND: PE=Private Equity; CRM=Cust Relsp Mgt; ASP= Appl Svc Provdr

The "demographics", or more appropriately - etaereiographics, of this situation involves in determining how many venture capital firms exist and how many deals they fund: It is safe to project between 500 and 2500 venture capital firms exist and that they will invest $23 bn in 300 firms in 2005. The National Science foundation estimated 448 venture funds in 1983 and 670 in 1989. The Commerce Department [US Industrial Outlook for 1993, Michael F Hinds] said there were 1740 firms in 1987, dropping to 792 in 1992, projected to raise $ 2.5 bn that year. Focus Ventures even dourly predicted only 50 firms will remain from 300 in 3-5 yrs [Pensions & Invesmtnets, 26jul4 Arleen Jacobius], but one should be doubtful about such narcissistic venture bluster coupled with histrionic media hype! (In fact, this is why it is so hard to get reliable statistics in this industry.) One "angel" speculated that "Angels make 50,000 investments per year; VCs make 1,500 new ones per year" ["Why can't Angels and VCs just get along" VCJ 7/05 p11]. In 1998 venture funds had a record twenty four billion dollars committed to them and invested a record sixteen billion in 2692 firms [VCJ 3/99 cit in 5/99]. Annualising the PWC Money Tree results herein we could return to and surpass that level (23 billion in 3000 firms) for 2005. VentureSource.com shows that in 1995 $7.1 bn was committed to venture funds, rising to $83 bn in 2000, dropping to $9.2 bn in 2003 and currently in the $15-18 bn range. It is worth noting that startups are one sixtieth of total venture funding and that medical firms are one sixth of all venture capital.

According to PWCMoneyTree.com, recent investments were:

$bln (#deal)	Biotech	MedDevic	Total	Startup	FirstRd
2004Q4	1.04(84)	.50(70)	6.1(805)	.10(59)	1.1(226)
2005Q1	.69(76)	.42(59)	4.9(703)	.09(36)	1.3(209)
2005Q2	1.12(97)	.43(57)	5.8(750)	.44(42)	1.4(218)

In the previous competitive analysis between ten and one hundred and fifty firms bought each package, yet these customers may be more generically described as private equity and invest in the likes of LBOs rather than VC, although cyclically, some firms do both. In many cases the limited partners expect the venture capitalists (aka general partners) to be extremely secretive and more recently when universities investing in VC demanded greater transparency, they were disinvited from investing in subsequent funds [CalPERS heads to court over fee disclosure, VCJ 10ct4; California passes anti-disclosure Bill, Carolina Brunschweig, 19sep5, Investment Management Weekly]. Therefore it is feasible, after spending 2007 with third world microcapital, to plan to sell software to ten venture firms (conservatively ignoring angel investors) by 2008 expecting about a quarter million dollars revenue from each client firm, reaching one hundred client firms by 2010, hopefully at revenues of over a million dollars per client firm.

The problem is that the boomers are disproportionately represented in the demographics, so their added weight effects everyone; whereas if they were more proportionately represented, their effects would be cancelled out by countervailing demographic segments. Duration [p432-438 Copeland & Weston, Financial Theory, AW 1983] is the amount of time it takes to get your money back from an investment: in effect when your need for that money is far away, you prefer a long duration, but if you want the money to live daily, you prefer a short duration and if you want that money "yesterday" you prefer a negative duration. If boomers take their money out of stocks and put them into bonds or even worse, just spend it, it will be considered a flip in duration matching. Venture funds have the longest durations of all. Nobel laureate Bill Sharpe is studying boomer retirement economics, what Moshe Milevsky of Toronto's York University calls the "dis-saving side of life". [Crain Investment News 9May5 p3] CNNMoney.com's Walter Updegrave calls it the "Bad News Boomers Effect" [1Apr5] Or as Canadian Financial Post's Peter Franchese put it "Watch out for ageing boomers: they might bite you" [21Feb5 p FP7] The website fourthturning.com (as well as the book "Fourth Turning" by Strauss and Howe) argues that USA history can be understood as 80-100 year demographic cycles.

As boomers entered their fifth decade of life during the 1990s, their average savings did not exceed fifty thosand dollars, hence, they became alarmed and fueled a huge investment boom, so large, in fact, that economies of scale forced fund managers, whose assets in some cases quintupled, to forego small investments. [FT 24Apr99 Qly Pers Fnc Svy p3; Flood of Cash to Mutual Funds Helped to Fuel '95 Bull Market FLOYD NORRIS 26Jan96 NYT p A1; Flood of New Money Makes '92 a Vintage Year for Mutual Funds p FF3 WP 16Dec92 Stan Hinden]

The Phipps family's Bessemer Fund (bvp.com) was the first USA venture fund. Harvard's General Doriot founded ARD, the first non-family venture fund in 1946 and invested $70,000 in Olson's Digital Equipment computers in 1957. Apple's initial venture funding in 1/78 was $512,000, with followup rounds of $724,000 in 9/79, $2.3 million in 8/79 anad an 88 million IPO in 12/80. Now, Apax/Patricof's Jenkins wrote in 11/89 Harvard Business Review that venture capitalists invest in increments of no less than $5 million and that startups are huge time-sinks. eFinancialNews.com reported 28Jan5 that Apax turned its back on European small startups, as well. In a coldly rational fiduciary world, venture investing might not be justifiable, because it involves some psychic return on time invested to investment stewards who themselves were once scientists. Michael Murphy in 1Sep1 SDP's Euro VCJ also reports the scarcity of investments in small amounts. Venture capitalists are paid a fee of 2% of the funds they manage and 20% of the profits. Therefore, the size of venture investments has increased, and entrepreneurs are forced to look to "angels" (formerly "3F: Friends, Family, Fools") for their initial capital. [Boston Herald 19Nov1 p29 Eric Convey]

Tom Stein [VCJ 1Apr4] wrote "novice angels were driving valuations to ridiculously high levels. They were giving amateurish advice that often steered companies in the wrong direction. Term sheets, meanwhile, were littered with errors and egregious anti-dilution clauses that were at best laughable, and at worst a major headache to undo"; He quotes Morgenthaler's Pavey, "Some friends of mine who are senior VCs simply won't touch a deal if angels are involved." GWU's Stanco [VCJ 7/05 Why can't Angels and VCs just get along? p10] conducted a survey which found that 78% of VCs found companies with angel investors unattractive because of "unrealistic company valuation".

It is proposed to use existing psychometric systems, and their mention in venture entrepreneur screening literature, as a starting point. However, in recent years, such algorithms have been vastly improved by taking the initial (principal component factor analysis) factor loadings and training them using neural networks.

The dominant psychological test is The Myers Briggs Kiersey Temprament Indicator. And the dominant psychiatric test is the Minnestota Multiphasic Personality Inventory. There also exists an excellent newer test by Oldham & Morris in their book Personality Self-Protrait [Bantam 1990] which includes a scoring mechanism that could be taken apart and used for our purposes; this constitutes published prior art but since we plan to do major tranformations, it should be further removed from any intellectual property infringements, which nonetheless should be looked onto by an attorney and licensed where appropriate: to perhaps solicit Prof Oldham, who is here in New York, as a partner would be phenomenal. Numerous handbooks on personality assessment will be used [Kleinmuntz, Personality Measurement, Krieger, 1967; Cattell, Personality and Mood by Questionnaire, Jossey Bass, 1973; Edwards, Meas Pers Traits, Holt, 1970] which provide factor loadings and traits, but not specific questions. It has also been suggested asking the entrepreneur to select a color scheme for the session will be revealing, based on Luscher Color Test [Random Hs, 1967]. Expert system rule engines are programs where about four fifths of an expert's knowledge is condensed to about a hundred rules of thumb; JESS is a shareware expert system engine in JAVA, a common web programming language, and available from Sandia National Laboratories [herzberg.ca.sandia.gov/jess] There are also numerous Java Psychological toolboxes [hcrc.ed.ac.uk/web_exp, uni-mannheim.de/fakul/psycho/irtel/pxlab]. eHarmony.com is a successful computer dating service that uses Principal Component Analysis and Kohonen Neural Networks to match daters [US Patent 6,735,568 which cites Shek "Psychometric prperties of the Chinese version of Dyadic Adjustment Scale" Psychologia, 1994, 37, 7-17]; It is further intended to avail ourselves of the Expectations Maximising factor analysis routines developed by Carreira-Perpinan and Ghahrmani of the University of Toronto. There have also been numerous, increasingly successful attempts at psychiatric treatment by computer [Marks, Shaw & Parkin, Clin_Psychol_Sci_Pract, 1998, 5, 151-70; Selmi, Klein, Greist, Sorrell, & Erdman, Am_J_Psychiatry, 1990, 147, 51-6; Bowers, Scott, MacFarlane & Gorman, _Depression, 1993, 1, 294-9; Ghoash & Greist, Psychiatr_Ann, 1988, 18, 246-50; Stuart & laRue, J_Cogn_Psychother, 1996, 10, 181-91] The original psychoanalytic software was Joseph Weizenbaum's ELIZA chatterbot, which although quite nonesensical, proved the concept feasible in 1960s MIT artificial intelligence research. It is also suspected that high-speed online questioning will allow the software to test personality traits more accurately because the applicant will not have time to arbitrage the replies. Moreover, expert system inference engines will decide in which direction the questions should progress depending on previous replies and should make some questioning quicker and that in need of further exploration longer. Honesty should also be testable [Preemployment honesty testing ed Jones Quorum1991 ISBN 0-89930-620-9 p65] by testing for reliability, validity, and fairness. In 1989 we had proposed a pre-web offshore overnight project management and version control system (like a cross between elance.com and sourceforge.net) and we might take advantage of expertise developed herein in psychometrics to revive that proposal.

Banking is broadly automating: NWU Kellogg's Mitchell Petersen has a working paper "Hard and Soft" about this. The precedent of the "SOES bandits" (when automated trading was only allowed for the NASD Small Order Entry System) of the 1980s leading to the eTrade of today is well known. Lending is largely automated as local "loan officers" are merely web form fillers with no more discretion, as customers may complete the same online form themselves instead. StudentLoan.com CitiAssist supplemental student loan approval is web-based and approval instantaneous. dorado.com, impacbroker.com, amres.net provide automated lending solutions and in fact these are seen by minorities as more fair than traditional systems [Comtois, Natl_Mortgage_News 24Oct05 p40]. Even personnel systems are largely automated (eg PeopleSoft) and indeed will be availed to check references and backgrounds of prospective entrepreneurs. AnalyzeMyCareer.com has an Entrepreneurship Index online test for $35. There exist legacy public domain MS DOS Myers Briggs programs. These tests could provide an immediate mock-up of our project.