From Theory to Practice: The Collaborative Model for Investing in Innovation and Energy

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Introduction

In response to a number of inefficiencies with traditional methods of investing, we argue that an increasing number of beneficiary organizations, such as pension funds, sovereign wealth funds, endowments and foundations, are adopting a new model of long-term investment management. The existing models that have been used by asset owners have included the Norwegian model, which focuses on investing primarily in traditional public markets; the Endowment model, which is based on adding risk into the portfolio by using external managers to invest in alternative assets such as real estate and private equity; and the Canadian model, which is based on investors employing resources in house to invest in real assets such as infrastructure and real estate directly. Each of these models has their own strengths and weaknesses and has been adopted in various amounts by investors around the world. In many ways these models dictate the types of assets that investors buy. Both the Endowment and Canadian models are premised on the idea that while being more risky, investments in illiquid, private assets enable investors to more accurately take advantage of key trends in the global economy. For example, the greatest performing asset class for the Yale endowment, which has been able to achieve 12.6% per annum over the last two decades, has been investing in innovation through venture capital. Similarly energy infrastructure has been a strong performer for direct investors.

As a global community, it is in our collective interest to cultivate an appetite for investing in innovation and energy to offset the extreme global challenges associated with rapid urbanization and population growth over the next 30 years. Radical resource innovation – across energy, agriculture, water, and waste – is required to prepare the world for this future. Finding a way to invest in the unpredictable is a crucial part of investing in innovation; in 2005, nobody could have conceived that in a decade's time, iPhones would be ubiquitous, YouTube

would become a household name, and Uber would represent a global behemoth. Technology now plays a crucial role in all major developments of the future, and the savvy long-term investor should want to be invested in tomorrow's technologies.

While existing models provide an option for accessing these types of assets, there are drawbacks. The endowment model has worked very well for certain investors but the model is premised on investors getting access to the top performing managers, which can be difficult and comes with the very high fees usually associated with this access point. Direct Investing has proven to be a much more cost effective way of accessing long-term private market assets, but it is very difficult for many investors to fully replicate the required investment management function in house.

As a result, the collaborative model has emerged over the last few years as a fourth model of institutional investment, and we have been working over the last few years to understand, analyze, validate, and even implement it. The motivation for such a model has been a renewed focus, since the Financial Crisis, among institutional investors on long-term investing in long-term private market assets in the most efficient and innovative way possible. As detailed below, the collaborative model is all about leveraging an asset owner's competitive advantage of scale and time horizon to form long-term relationships with trusted investment partners. The collaborative model of investment essentially combines a number of the existing models, recognizing that:

1. *Private market investing is consistent with a long-term investment strategy.*
2. *The direct method of investing is a more cost effective means of accessing private market investments, but requires significant in-house resources.*
3. *Alternative external investment managers are required but the governance needs to be redefined for more alignment.*

Against this background, the collaborative model focuses on how innovative platforms can be developed directly with other peer investors and investment partners. The platforms/vehicles can help a group of peers invest more efficiently in long-term assets, get closer to either a direct investment method for real assets or an endowment method for innovation but on far more aligned terms. To be clear, these include co-investment platforms/vehicles, joint ventures, and seeding managers. We'd also suggest that the Collaborative model should extend to the new ways in which investors are engaging with their intermediaries and how new intermediaries are being formed to accommodate the unique long-term characteristics of these asset owners.

The key component of the Collaborative Model is an asset owner's own social capital, which is as asset than many institutional investors have failed to proactively develop. It is well understood that an asset owner must diligently cultivate financial and human capital, the value of an asset owner's social capital – such as the ability to build organizational capacity, share knowledge and ultimately find aligned co-investment partners – is less well understood. In most cases, it is in fact the network of an asset manager that is the biggest value-adding element of these actors in the investment management process, which means the asset managers can impose asymmetric and misaligned terms on the asset owner. We believe that an institutional investor that develops its social capital can reverse this trend and reap significant benefits for executing its investment management function. Furthermore, understanding in more detail, the unique organizational advantages of asset owner entities (whether they be sovereign funds, endowments, pension funds or foundations) can help the process of building social capital and subsequently enhance organizational capacity and investment performance.

While some of the concepts and vehicles that characterize the collaborative model (joint ventures, platform companies, co-investment platforms, seeded funds) have been around in some capacity for many years, our research has shown that the majority of these initiatives designed for long-term investment have been instigated over the last five years. This paper thus tries to further crystallize for readers how long-term investment communities can deploy them. Specifically, we provide an example of how the University of California Office of the CIO has adopted the Collaborative model in rolling out a number of new initiatives over the last two years.

The University of California Implementation

Organizational Mindset Change

The Regents of the University of California are the central governing body for the UC system, with the UC investment funds being managed by the Office of the CIO. The investment funds amount to about $100 billion and are made up of university endowment (with an annual spending rate of 4.75%) and defined benefit pension plan, which has annual net outflows with funded ratio of about 80%. The organizational mindset of the UC Office of the CIO over the years has reflected that of a classical US defined-benefit pension fund.

While the Office of the CIO has performed credibly over the last 20 years, a key motivation for implementing aspects of the collaborative model into the UC strategy has been the need to search for new sources of value and opportunities that are uncorrelated with traditional sources such as US public stocks (which are unlikely to continue appreciating in the same way they have over the last five years). At the core, was the realization that the UC investment funds needed to move away from responding to every bump in the road in the quest for short-term returns and instead adopt a long-run perspective that braces for the radical uncertainty that comes with the future. The looming impacts of climate change fueled the positive steps taken by UC towards investing in resource innovation, cleantech and renewable energy sources. Given the impact that technology has had on our lives in the last twenty years, the UC has also made a conscious effort to not only understand how technologies will affect their own function, but capitalize on the innovations that will change our lives over the next twenty years.

The motivation behind the collaborative model is the need for beneficiary organisations to focus more diligently on long-term performance and risks. In this section, we highlight some of the key organizational mindset changes that illustrate how the collaborative model has been implemented at the UC.

Re-Intermediation

The collaborative model recognizes that many institutional investors will still need to use asset managers for much of their

investment management function. Institutional investors will however need to re-intermediate with their service providers in a way that creates more alignment. Re-intermediation is all about creating governance structures based on trust and co-operation over the long-term as opposed to short-term discrete transaction based contracts where the parties to the transaction are irrelevant. For large investors, this means negotiating co-investment rights which are free from adverse selection by managers and setting up separate managed accounts, given the ability of these investors to deploy significant amounts of capital at a time. For smaller investors that need to use intermediated products, an emphasis needs to be placed on transparency. The true costs of financial intermediation have been difficult to identify, rationalize and minimize. Investors should demand a detailed breakdown from their managers of how they make their money from using investors' money, and if not, investors should be prepared to walk away. If alignment is the key ingredient in long-term returns, transparency around fees and costs is one of the few ways to ensure that you can achieve it. This may require having fewer and deeper relationships with service providers. While it might be difficult to have a purely 'relational' form of governance with all asset managers, constructing portfolios from a concentrated set of assets that are deeply understood will hopefully reduce unwanted risks, costs and increase desired returns.

The UC has implemented such strategies in their roadmap for investing in the future – The 10 pillars of centennial investing. Since December 2013 to June 2016, the number of private equity managers used by the firm has reduced from about 130 to 50 while the number of co-investments made during this time period increased from about 20 to 25. The performance of the private equity co-investment program since inception (January 2010) has been an annualized return of 28% and provided estimated savings of $130 million ($30 million in management fees and $100 million in carried interest). Negotiating co-investment rights has been important for the UC and the strong record will be built upon moving forward.

Considerable attention has been focused on fee and cost transparency. Notwithstanding the disclosure required of all California public pension plans as per Assembly Bill No. 2833 that was passed in the summer of 2016, the UC will be providing full transparency on all fees paid to its managers for new investments in 2017. On top of the existing disclosure about fund gross and net performance, the enhanced disclosure will include management fees, fee offsets, portfolio company fees, and carried interest.

Build Knowledge by Building Social Capital

While a key component of the collaborative model is to develop social capital in order to ultimately co-invest via aligned vehicles into long-term investment opportunities, we also argue that investing time and resources into building social capital can help expand organizational capacity through knowledge sharing and staff secondments. For many investors that do not have the resources in house or are subject to structural and other long-term investing barriers, participating in the collaborative investment vehicles may not be possible. However, as indicated above, the collaborative model is just as much about a shift in mindset and thinking innovatively as it is about formally developing efficient investment vehicles. This firstly can be achieved by creating a collaborative environment within an investment organization, breaking down silos and facilitating information sharing across teams. As indicated in our case study research, internal collaboration is almost a pre-requisite before an organization carries out external collaboration.[1] It doesn't make sense to have an individual travel the world developing relationships with smart, aligned peers if that individual does not have the ability to translate that into some action via internal relationships with his or her investment team at home. Also, as mentioned above, much of the knowledge and value creating power of investment intermediaries is the rich, diverse network that they are able to tap into when they are executing their investment management function. One of the benefits of the Endowment model has been the access to top performing managers through the alumni networks of the university endowments. We believe (based on theoretical and empirical evidence) that an investment in time and resources into developing an investor's network, can lead to a number of knowledge creating and capacity building benefits for investor organizations.[2]

The UC has made a conscious effort to build its social capital through deepening its relationships with other peer investors locally and globally with other pension funds, sovereign funds and endowments. It has been able to do this through the personal relationships of individuals that have come into the organization. It is well in tune with the major global forums for long-term investing including the Institutional Investor Roundtable, Sovereign Investor Institute, Pacific Pensions Institute and World Economic Forum. It is also partly through these social capital avenues that the UC has been able to attract high quality senior talent to the organization in the key areas of public/private investing and risk management. Through this evolutionary process of building social and subsequently human capital, the UC has been able to grow into a reputed investment organization

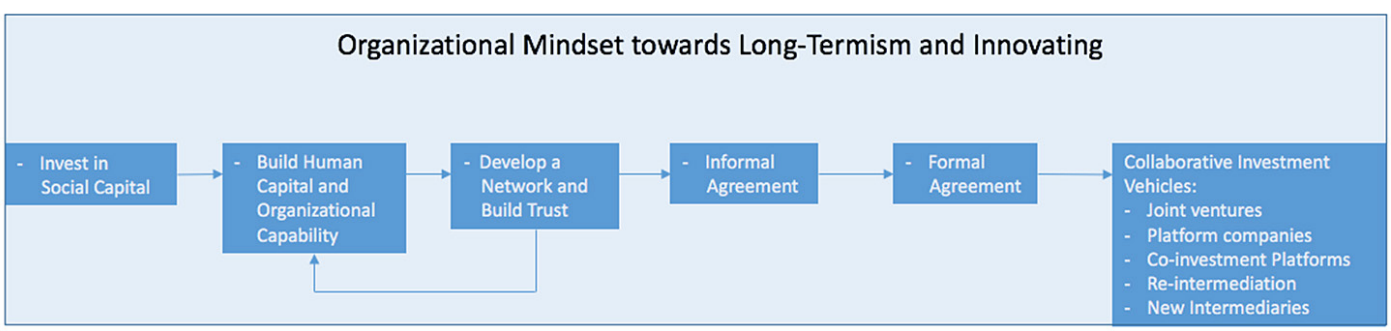

Figure 1: Collaborative Investment Process

on both the local and global stage, which helps to perpetuate an effective network building process.[3]

Many of the initiatives outlined in this short white paper follow a similar evolutionary process, indicative of the collaborative investing process, as illustrated by figure 1.

The UC Collaborative Investment Vehicles

Collaborative Vehicle 1: Aligned Intermediary for Climate Infrastructure

Part of the Collaborative model, is the need for new intermediaries to be formed to help channel long-term investor capital into long-term private market assets. One sector that is particularly suitable to long-term investors is Cleantech and Climate Infrastructure. Many investors in cleantech venture capital firms lost a lot of money because the scale of investments required and time horizon of clean energy companies did not fit within the fund structures of VC firms. This phenomenon is commonly referred to as the Valley of Death. There is an innovation valley of death at the early stage level of product development as well as a commercialization valley of death at the growth stage or project finance level of development for cleantech, renewable energy companies and ultimately climate infrastructure. Thus the Aligned intermediary was formed by the University of California as an investment advisory vehicle to originate, analyze and syndicate climate infrastructure opportunities on behalf of a membership base of long-term investors.

After a decision was made by the team at the Office of the CIO to commit about $1 billion to investments in the Clean Energy space, the team had to strategize how this investment program could be most effectively managed. It was soon evident that a large set of viable and attractive new ventures and sustainable infrastructure projects were being left behind due to a misalignment with traditional asset classes. The University of California thus went about finding an innovative solution to this problem.

The Aligned Intermediary (AI) was created as a University of California initiative to pool like-minded investors and provide a mechanism for helping these long-term investors invest in the most promising resource innovation assets. The initiative was developed into a new organization with the following objectives:

- *Reducing transaction costs by sourcing, measuring, screening and introducing companies that have as a primary function, resource innovation that reduce climate change effects.*
- *Providing buy-side advisory services to reduce the internal costs required by the member LTIs.*
- *Providing syndication services for member LTIs for deals that are of interest.*
- *Bringing standards, norms and benchmarks to the sector for LTI's.*
- *Collecting and anonymizing data on capital flows and returns to improve the understanding of investment activity in the sector.*

The AI has been developed into an independent organization with the UC Regents playing an integral role in setting up the governance structure, hiring a CEO and collating other LTI members into the initiative. The initiative has evolved over time to develop the right structure that fits in with how long-term investors operate. While these new initiatives in theory do sound like a good idea, there are a number of challenges that need to be overcome in order for them to come to fruition. This was evident in many of the cases that were studied in validating the Collaborative model. In the case of AI, there were challenges in co-ordinating the efforts of each of the LTI members (each LTI works very differently) towards the common purpose. This has been overcome and AI (as at November 2016) is in the process of completing three transactions for its long-term investor members.

A key ingredient to setting up the AI, interestingly, was the backing of four charities that allowed the AI to operate, from the investors' perspective, for free for the first 18 months. These charities were part of the UC's social capital and they recognized that new financial intermediaries would be required if we were going to get the private capital flowing into clean infrastructure. As such, they underwrote the launch of the AI. Indeed, these four foundations –Planet Heritage through it's multi million commitment but also Hewlett, MacArthur and Climate Works - represent new patrons of the coming 'aligned financial services sector'.

The AI is an example of how the UC Office of the CIO has put the collaborative investing process into practice to invest innovatively and solve some existing structural market deficiencies. Its network was been drawn on multiple times in bespoke ways, both pulling in peers but also in engaging charitable foundations and even the White House to get behind the initiative.

Collaborative Vehicle 2: UC Ventures for Innovation Investments

Platform companies and seeding management teams for attractive private market asset classes are core examples of the new vehicles that characterize the collaborative model. UC Ventures is an example of such a vehicle. It was set up by the Regents of UC Office of the CIO as a $250m Venture Capital fund with the idea of overcoming some of the traditional shortcomings of LP-style VC investing. UC Ventures aims to exploit its organizational comparative advantage by accessing the large pipeline of research, ideas and inventions originating from within the university network.

One of the main motivations for conceiving the UC Ventures program was the attraction of investing in innovation and generally, as these are the technologies that will shape and define the future. While investing in innovation can be difficult and arguably more risky, it launches businesses that can potentially disrupt and challenge pre-existing systems. UC Ventures would allow the organization to participate in the innovation economy and to invest in ideas, inventions and companies yet to be conceived.

The main route to technology or innovation investing has traditionally been through the VC channel. Venture Capital as an asset class has generally not performed as well as many investors thought it would. It is true that the top tier firms have performed a lot better, mainly due to a limited number of 'home runs', but a large proportion of VCs have performed very badly. UC was

fortunate to get early access to some of the better performing VC firms. This performance however, did not outperform public market benchmarks significantly enough to account for the greater illiquidity and asset risks of VC funds.

By internalizing the investment strategy, focusing the team on the main objective of long-term value creation, and exploiting its immediate and established network, the OCIO hopes to create a VC program with a longer horizon and more closely aligned with its endowment portfolio's objectives. It also aims for UC Ventures to be more scalable than traditional VC vehicles. The current allocation of $250 million is already larger than most VC fund commitments, and members of the OCIO want the UC Ventures portfolio to grow as the program achieves good results.

UC Ventures is designed to be a team of independent investment professionals operating at arm's length from the university, and will pursue investments in UC-affiliated companies within a clearly defined investment mandate. The team will be supported by operational staff managing the business's accounting, administration, finance and operations. UC Ventures will report to the UC Office of the CIO, which will hold approval and veto rights over critical governance issues.

Once fully operational, the team at UC Ventures expect that the unique channels of deal flow from the UC eco system will present them with over 200 investment opportunities every year. These opportunities will then be subject to rounds of reviews, due diligence and exploratory analyses until the pipeline is narrowed to about three to six seed-stage investments and three to five post-seed-stage investments. These investments are expected to translate into an annual capital deployment of $30 million-50 million over the investment period. So far, investments have been made into three companies by UC Ventures.

The UC Ventures Fund is an example of a long-term investor that has identified an attractive area that could provide outperformance if structured in the right way. In order to help achieve its objectives in technology and innovation investing, it has seeded a new vehicle that will operate independently from the Office of the CIO, to take advantage not only of its unique long-term characteristics but also the relative organizational advantages of being at the heart of one of the most innovative university and entrepreneurship ecosystems in the world.

Key Lessons and Takeaways

There are a number of lessons that can be drawn from the UC's implementation of the collaborative model. Firstly, the collaborative model might be perceived as restricted to only the most sophisticated investors to implement. The UC, while being large in size by assets under management, has many challenges. It is a large, public organization with a diverse stakeholder base and complex governance structure. It is nothing like a typical asset manager in the private sector let alone other sophisticated asset owner organizations. The implementation of the initiatives above has shown that even the less sophisticated, constrained organizations can execute the model by adopting a transparent, disciplined and understandable decision-making process, not controlled by one person. Getting stakeholders across the finish line was the result of smart and talented professionals working together to the highest standard.

One of the key takeaways from UC's implementation is the importance of leveraging the competitive advantages that a long-term investor organization possesses. For a lot of these investors, it is their long-time horizon and size of capital that provides them with significant negotiating power when choosing more efficient access points for long-term investments. Investors need to exercise this power but also understand the responsibility and duty of care that goes with this.

UC has also emphasized the importance of utilizing unique organizational advantages for long-term investing. In implementing the collaborative model, UC has tried to make the most of the constituents that the investment office represents, one of the largest and well-ranked public university systems in the world. This was particularly important in setting up the collaborative UC Ventures vehicle. But we've also established other platforms with name-brand people on the basis that we represent the UC. While the UC system is distinct, other LTI's will also have unique organizational advantages that they will need to consider leveraging, particularly when they are forming relationships with potential investment partners.

It must be noted that a number of the initiatives outlined above are at an early stage of development and time will tell how effective (or successful) they will be. The foundations for these strategies have been well researched and planned and so the signs are that the organization is well positioned to not only stomach the challenges moving forward but take advantage of the attractive opportunities that come up. In our previous research, the benefits of the collaborative model have been theoretically validated and empirically verified by a number of sophisticated long-term investors around the world. The UC implementation provides useful insights and lessons for other like-minded investors that might not be as sophisticated as the large Canadian direct investors but who share similar values and long-term objectives.

Endnotes

1. Monk, Ashby H. B. and Sharma, Rajiv. (2015) *Capitalising on Institutional Co-Investment Platforms*. Available at: http://dx.doi.org/10.2139/ssrn.2641898.

2. Monk, Ashby H. B. and Sharma, Rajiv and Feng, Wen. (2015) Social Capital and Building an Institutional Investor's Collaborative Network. Available at: https://ssrn.com/abstract=2698178.

3. Please see http://www.ai-cio.com/2015-industry-innovation-awards/?page=3. Also please see paper in footnote 2, for a discussion around power, reputation and centrality effects for the network building process.

Authors' Bios

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Jagdeep Singh Bachher, Chief Investment Officer and Vice President of Investments, is responsible for managing approximately $103 billion across the UC Endowment, Pension, Retirement Savings, and Working Capital programs. He reports directly to the Board of Regents on investment matters and the Chief Financial Officer on administrative issues related to managing a group of more than 50 investment professionals and staff.
Before joining the UC system, Bachher was an Executive Vice President of Venture and Innovation for Alberta Investment Management Corp. (AIMCo), one of Canada's largest and most diversified investment fund managers. In addition, he served as the corporation's Deputy Chief Investment Officer and Chief Operating Officer.
Prior to his position at AIMCo, Bachher served as president at JH Investments (Delaware) LLC and worked in the U.S. Wealth Management, Canadian, and Investments divisions of Manulife Financial. Before joining Manulife, he was an entrepreneur. He is a visiting scholar in the Global Projects Center at Stanford University and chairman emeritus of the Institutional Investors Roundtable, a leading financial think tank. He is also a member of Young Presidents' Organization (YPO) and the Institute of Corporate Directors. Bachher received his Ph.D. and M.A.Sc. degrees in management sciences and B.A.Sc. degree in mechanical engineering from University of Waterloo. He has been a champion for change in the investment business and gained an international reputation as an innovator.

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Dr. Ashby Monk is the Executive and Research Director of the Stanford Global Projects Center. He is also a Senior Research Associate at the University of Oxford. Dr. Monk has a strong track record of academic and industry publications. He was named by aiCIO magazine as one of the most influential academics in the institutional investing world. His research and writing has been featured in The Economist, New York Times, Wall Street Journal, Financial Times, Institutional Investor, Reuters, Forbes, and on National Public Radio among a variety of other media. His current research focus is on the design and governance of institutional investors, with particular specialization on pension and sovereign wealth funds. He received his Doctorate in Economic Geography at Oxford University and holds a Master's in International Economics from the Universite de Paris I - Pantheon Sorbonne and a Bachelor's in Economics from Princeton University.

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Rajiv Sharma is a Research Manager at Stanford University's Global Projects Center and an honorary research associate at the Oxford University Smith School of Enterprise and the Environment. He received his Doctorate from Oxford University in the field of Pensions, Sovereign Wealth Funds and Infrastructure Investment. Rajiv has worked as an economist for the Organisation for Economic Cooperation and Development (OECD) in Paris and as a research fellow for the United Nations Environment Program Finance Initiative. While at the OECD, he worked at the International Transport Forum and he was also part of the OECD-G20 Long Term Investment Project. Promoting long-term investment by institutional investors is a focus of his current work at Stanford and through this, he has worked with a number of global institutional investors and governments. He has also worked for venture capital private equity firm Oxford Capital Partners and London-based Infrastructure/Private Equity Advisory firm, Campbell Lutyens.