



COMMONWEALTH OF PENNSYLVANIA
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM

Public Investment Memorandum

Apax Digital L.P.

Private Equity Commitment

Darren Foreman
Senior Portfolio Manager

July 24, 2017



Recommendation:

Staff, together with Hamilton Lane, recommends the Board commit up to \$100 million to Apax Digital L.P. (the "Fund"). Apax Partners is sponsoring the Fund to leverage their experience in sourcing, selecting, and adding value to digital companies.

Firm Overview:

Apax Partners ("Apax" or "GP") is seeking to raise \$800 million for the Fund, which will aim to pursue a balanced portfolio of growth buyout and growth equity investments in technology companies globally. The history of Apax is interwoven with the development of the private equity asset class in Europe and the U.S. Throughout its more than 30-year history, Apax has successfully raised and advised 33 funds with aggregate commitments of approximately \$46 billion as of December 31, 2016. These funds have invested across various investment stages and through several economic cycles. Apax was created as a venture capital business, and in its early years, was a confederation of country-specific funds and management companies (U.K., Germany, U.S., and Israel). In 1999, led by the increasing regionalization and, ultimately, globalization of businesses, the first Pan-European fund was raised. Apax's history supports the foundations of the core pillars of its current strategy: deep sector and sub-sector knowledge, a global platform, and a drive to support the transformation of portfolio companies.

Two Co-CEOs, Mitch Truwit and Andrew Sillitoe lead the Apax team. Together, they act as the firm's Executive Committee. Mitch and Andrew not only oversee the day-to-day operations of the firm; they also lead the firm's focus on the broader investment strategy (with the CIO, various sector heads and product heads leading the execution of that strategy within its products). Unanimously elected in December 2013 by the Equity Partner group, Andrew and Mitch are two of the firm's best investors with proven track records. They have highly complementary skillsets (Mitch began his career as an operator, whereas Andrew was a consultant prior to joining Apax) and the Co-CEO model allows them to remain close to the business of investing.

Fund Size

The Apax Digital Fund is seeking equity commitments of \$800 million with a hard cap of \$1 billion.

Investment Strategy:

The Fund will aim to pursue a balanced portfolio of growth buyout and growth equity investments in technology companies globally, with average equity checks of \$50-75 million per investment. Apax's unique combination of an experienced team, longstanding, focused tech expertise, global platform, and flexibility as well as operating value-add will make the Fund well-positioned to capitalize on current investment opportunities.

The technology market is broad, with dozens of sub-sectors, each comprising large addressable groups of prospective investment opportunities. The GP intends to pursue a focused strategy, principally targeting sub-sectors across the enterprise technology and consumer internet spaces, especially those where the firm and the Apax Digital Team have prior investing experience. Examples of principal subsectors within Enterprise Technology are software-as-a-service, data analytics, and tech enabled services; and within Consumer Internet are marketplaces, disruptive E-commerce, mobile, content and digital media.

Investment Team:

The Fund will have a fully dedicated team of growth investment professionals and 2-3 dedicated Operations team members. The Managing Partners will be supported by a dedicated team of 11-13 investment professionals based in New York and London. As of February 2017, nine team members are in place. The Fund will operate independently in Guernsey with investment recommendations provided by Apax Partners LLP. Investment recommendations will be led by two Managing Partners with the



guidance of the Digital Investment Committees and Digital Strategy Chairman, whose members are also part of Apax Partners LLP. The Fund will benefit from the Apax Partners LLP Global platform, which includes the support of the Investor Relations and Operations Teams.

Name	Role	Yrs. Experience	Prior Experience
Marcelo Gigliani	Managing Partner	18	Mercer Management Consulting
Dan O'Keefe	Managing Partner	17	Technology Crossover Ventures GP
Mitch Truwit	Chairman, Co-CEO	10	CEO of Orbitz
Salim Nahoo	Equity Partner	17	McKinsey & Co
Andrew Sillitoe	Co-CEO	19	Consultant at LEK
Jason Wright	Equity Partner	17	GE Capital
Simon Cresswell	Partner and General Counsel	20	Goldman Sachs
Andrew Guille	Executive Director	38	IPES, Leopold Joseph & sons
Trins Le Noury	Executive Director	16	Northern Trust

Supporting the investment team in this process is the Operational Excellence Practice (OEP), which has proven operational expertise and is organized along specific practice areas. Members of the OEP possess significant operational expertise and/or acumen as managers. Their experiences from prior roles in leading global organizations are utilized via functional practice areas to drive value creation for the Apax deal teams and portfolio companies. Where necessary, the OEP team is supported by additional third party firms and consultants to provide supplementary capabilities. The OEP has cultivated these partnerships over the past number of years to meet the consistently evolving needs of portfolio companies and deal teams.

Investment Instruments:

The Fund will make equity investments in technology companies. The Fund may also make investments in temporary (i.e. bridge) financing instruments.

Market Opportunity:

Digital progress is transforming consumer behavior and interaction with businesses. Microsegmentation and data analytics can provide specific insights into unique consumer needs and usage patterns, which has allowed for a personalized and convenient service for consumers. The Internet of Things facilitates integration of various technologies and brands together, forming cohesion across channels and platforms. Many sectors of the modern economy rely upon technology to improve quality, productivity, and profitability. Businesses that fail to embrace new technologies and innovation may fall behind and can become disrupted by new models that are brought to market to fulfil newly developed needs. Technological disruption has created a strong pace of change, presenting an opportunity to invest behind innovators that are able to develop new products, platforms, and services. The GP believes that the Apax Digital Team has the sector expertise and human capital resources to identify and support attractive businesses in this environment. Companies in the technology sector can often have a greater ability to expand internationally than companies in other sectors due to mobility of ideas, scalability in new markets, and limited barriers posed by borders. The GP believes that Apax's breadth of knowledge across geographies and experience in building global organizations can also provide valuable insights to such businesses. Following the expansion of the technology sector, public and private markets have expanded their investment capacity for the segment and the General Partner believes that the inherent dynamism and growth have created interesting opportunities for private equity investment. Below is a list of statistics and estimates regarding technology:

- In 2015, the global digital economy accounted for 22% of the world's economy, and it is rapidly growing.
- In 2015, 68% of U.S. adults had a smartphone, up from 35% in 2011.
- Every minute of the day, YouTube users upload over 48 hours of new video, Google receives over 2 million search queries, and email users send over 200 million messages.
- Estimates include:



- Smartphone traffic will exceed PC traffic by 2020.
- Traffic from wireless and mobile devices will account for 2/3 of all internet traffic by 2020.
- The number of devices connected to IP networks will be three times as high as the global population in 2020.
- Virtual reality traffic quadrupled in 2015 and is expected to increase 61-fold between 2015 and 2020.
- The number of devices connected to the internet will rise from c.10 billion today to 50 billion by 2020, creating a market worth \$3 trillion in revenues by 2018.

Investment Highlights:

Compelling extension of current Apax Funds' strategy								
The Fund is a natural and compelling extension of the strategy of the current Apax Funds into the growth segment. Apax Funds have a long and successful history of investing in technology companies, with strong realized returns in both buyout and growth investments. Due to its global platform, Apax has a competitive advantage in sourcing opportunities, selecting the most attractive assets for the Fund, and driving operational value post investment.								
Consistently Strong Investment Performance								
Apax's advantage in sourcing, selection, and value-add is proven by 30+ years of Apax Funds' investing with 32 investments since 2003 for \$8.8 billion invested, 3.9x (gross) MoC and 26.4 (gross) IRR for realized deals. Apax covers a global opportunity set, with global team sourcing capabilities and insights, with a core competency in digital. In four funds since 2005, Apax has been a top quartile performer when compared against Cambridge benchmarks:								
Performance of Digital Track Record Perimeter Investments as of March 31, 2017								
<i>Fund</i>	<i>Vintage</i>	<i>Gross MoC</i>	<i>Net MoC</i>	<i>DPI</i>	<i>Net IRR</i>	<i>Top Quartile?</i>	<i>Net PME vs MSCI ACWI</i>	<i>Net PME vs S&P 500</i>
<i>AV III</i>	2012	1.6x	1.4x	0.3x	20.2%	Yes	12.3%	8.7%
<i>AE VII</i>	2007	2.7x	2.1x	1.8x	15.6%	Yes	8.2%	3.9%
<i>US VII</i>	2006	2.6x	2.1x	1.8x	16.0%	Yes	10.3%	6.6%
<i>AE VI</i>	2005	7.2x	5.1x	4.6x	33.4%	Yes	24.9%	20.3%
<i>AE V</i>	2001	1.7x	1.4x	1.4x	11.7%	No	7.3%	10.1%
<i>Ex VI</i>	2000	4.4x	3.0x	3.0x	20.4%	No	13.7%	15.4%
A Team Of Proven Technology And Digital Investors								
The Apax Digital Team will be led by two Managing Partners, Dan O'Keefe, and Marcelo Gigliani and are based in Apax's New York City office. Dan and Marcelo each have 18 years of investing experience in growth buyout and growth equity transactions.								
Dan O'Keefe initially joined Apax in 1999, departing after a two-year analyst program, to attend Harvard Business School. Subsequently, he has spent his career focused on growth stage investing in technology companies, most recently holding the title of General Partner at Technology Crossover Ventures. He has participated in a number of leading growth equity investments across the digital sector including Spotify, Rent the Runway, EA and VICE Media.								
Marcelo Gigliani joined Apax in 1999. He has worked across Apax's global office platform; working in New York, London, and Madrid. Marcelo participated in the development and leadership of the Apax digital practice. He has led several of the Apax Funds' digital buyout and growth investments, including Trader Corporation, Dealer.com, Idealista, and Boats Group (formerly Dominion Marine Media).								
Dan and Marcelo will benefit from the guidance and insights of Digital and senior technology leadership								



at the firm:

- Mitch Truwit, Co-CEO of Apax, has been appointed Chairman of Apax Digital. Mitch has 10 years of investing experience at Apax and has 10 years of operating experience in digital firms through his prior roles, serving as CEO of Orbitz and COO of Priceline.com.
- The Investment Committee includes proven and experienced investors of the firm's Tech Leadership:
 - Andrew Sillitoe (Apax Co-CEO and Equity Partner, London, who grew to be a leader within the Tech&Telco sector team over the last 18 years),
 - Salim Nathoo (Equity Partner, London, and co-leader of the firm's Tech&Telco sector team), and
 - Jason Wright (Equity Partner, New York and co-leader of the firm's Tech&Telco sector team).

Investment / Risk Considerations:

Competition From Other Middle Market Firms

Apax Digital expects to compete with certain traditional, incumbent pure-play growth equity funds, smaller upstart growth funds, new growth funds launched by larger buyout GPs, and, on occasion, larger crossover/mutual funds. Despite the competitive environment, we believe Apax's longstanding tech investing experience, global flexibility, operating value-add, and dedicated growth team, creates a highly differentiated approach to the market:

Liquidity & Leverage Profile

In general, at the portfolio level, Apax aims to lever deals at a sensible level in order to amplify returns to the relevant Fund without taking on significant risk to the businesses. There are no targeted leverage levels, as each investment is considered and evaluated separately. Leverage levels will vary by Portfolio Company based on several factors, including; cash flow generation potential, market opportunity, competitive intensity, requirements for add-on acquisitions, etc. Some portfolio companies in the Fund may have no leverage or have net cash balances.

At the fund level, it should be noted that the Digital Fund will make use of a capital call bridging facility. This is an efficient use of capital and allows capital to be called from LPs less frequently and in a more structured manner.

PSERS History & Performance:

The table below summarizes Apax Europe's performance with 3/31/17 reported valuations. The investment strategy of Apax Europe was a multi-sector approach with some exposure to the emerging markets. The Apax Digital Fund is a sector fund with exposure primarily to the U.S. and Europe.

Fund (mm's)	Portfolio	Vintage	Commit.	Contributions	Distributions	NAV	Net IRR	MoC
Apax VII	PE	2007	\$273.8	\$289.8	\$304.0	\$98.8M	6.45%	1.39x

Portfolio Fit:

A commitment to the Fund will be allocated to the Private Equity portfolio. An additional commitment to Apax will allow PSERS to continue its relationship with a high-conviction manager that is well positioned to execute on its investment strategy of buying into and growing digital technology empowered companies. The Private Markets Team is strategically looking to add some technology exposure in the overall portfolio.



The table below summarizes PSERS' projected exposure inclusive of a recommended \$100 million commitment to the Fund: (adjusted to 3/31/17)

Investment Type (\$mm)	Active Commitments	%	Market Value	%	Unfunded	%	Total Exposure	%
Private Equity	\$ 14,326.0	66.2%	\$ 5,166.5	67.4%	\$ 3,331.0	76.8%	\$ 8,497.5	70.8%
Special Situations	4,315.4	19.9%	1,056.1	13.8%	572.3	13.2%	1,627.4	13.6%
Venture Capital	2,568.9	11.9%	945.9	12.3%	370.3	8.5%	1,316.2	11.0%
PE Internal	425.2	2.0%	499.4	6.5%	62.3	1.4%	561.7	4.7%
Total	\$ 21,635.5	100.0%	\$ 7,668.0	100.0%	\$ 4,335.9	100.0%	\$ 12,003.9	100.0%

Finance Committee Disclosure:

Relationship with Hamilton Lane:	None Disclosed
Placement Agent:	None
PA Political Contributions:	None Disclosed
PA Impact:	New Fund Strategy
Conflicts:	None Disclosed
First Time Fund With PSERS:	No, PSERS committed \$200M to Apax Europe VII (2007 Vintage)
PSERS Internal Alpha Committee Approval:	July 25, 2017

Oversight Responsibility:

Investment Office:	Charles J. Spiller Darren Foreman	Deputy CIO, Non-Traditional Investments Senior Portfolio Manager
External Consultant:	Hamilton Lane	



Hamilton Lane

July 20, 2017

Board of Trustees
Commonwealth of Pennsylvania
Public School Employees' Retirement System
5 North 5th Street
Harrisburg, PA 17101

Re: Apax Digital L.P.

Dear Trustees:

Apax Partners LLP ("Apax") was founded in 1969 and has built a longstanding organization with a well-tenured senior investment team. Apax has developed a strong brand in the technology sector and it is expected that the digital platform will smoothly integrate into the existing organization as a natural extension of the General Partner's existing strategy. Apax is targeting \$800 million in commitments with a \$1 billion hard cap from limited partners for its first dedicated technology fund, Apax Digital L.P. (the "Fund"). Apax expects to hold a first close in August 2017 and a final close in Q3 2017. The General Partner will commit at least 2% of commitments (expected to be a minimum of \$20 million) to invest in or alongside the Fund.

The Fund will primarily pursue investments in enterprise technology and consumer internet companies headquartered in North America and Europe. The General Partner's consistent focus on the target sector has allowed it to develop expertise and strong networks in the technology industry. The Fund is expected to source meaningful deal flow through the broader platform. The strategy is distinct but complementary to the flagship strategy as it targets smaller positions, allowing Apax to capture deal flow that aligns with its technology expertise but that did not previously fit its mandate. The Fund has the flexibility to pursue various ownership stakes through minority growth and control buyout transactions, enabling opportunistic investing. The Fund will primarily target equity investments in the range of \$50 million to \$75 million. Apax estimates that the Fund will make approximately 12-15 investments. The General Partner seeks to create value primarily through EBITDA growth by implementing operational improvements; the Operational Excellence Practice ("OEP") team, a group of dedicated in-house professionals, help to drive these improvements. Apax intends to grow EBITDA by improving back-office and marketing functions, implementing ERP systems, augmenting existing management teams, executing carve-out transactions and pursuing accretive add-on acquisitions. Apax has generated attractive returns across technology investments made through the flagship funds, with attractive capital preservation and limited write-offs.

Apax Digital's investment thesis can be summarized as follows:

- Apax has structured a dedicated and experienced team of investment professionals focused on sourcing, diligencing and managing investments for the digital platform
- The digital strategy is expected to benefit from the broader platform's resources, including senior investment oversight, back-office functionality and sourcing capabilities driven by Apax's strong reputation and relationships
- Apax has a proven ability to generate value in digital investments with assistance from Apax's Operational Excellence Practice ("OEP")



Hamilton Lane

Hamilton Lane's recommendation is based upon the following analytical factors and is made within the context of Commonwealth of Pennsylvania Public School Employees' Retirement System's ("PSERS") investment guidelines.

- Detailed due diligence, including interviews with industry peers and private equity professionals. The on-site due diligence visit was performed on July 6, 2017.
- Evaluation of the composition of the investment team, how they work together, compensation structure and other factors that help determine whether a group is likely to be able to replicate past successes as currently configured.
- Evaluation of the Fund's proposed investment strategy within the context of the current investment environment.
- The strategy proposed for the Fund is appropriate for the Private Equity Partnership component of the portfolio.

The individuals at Hamilton Lane who were involved in the due diligence process for the Fund are:

Andrea Kramer – Managing Director, Bala Cynwyd Office

John Stake –Vice President, Bala Cynwyd Office

Julia Butz –Analyst, Bala Cynwyd Office

Spencer Reiter –Analyst, Bala Cynwyd Office

Based on the above, Hamilton Lane recommends that PSERS commit up to \$100 million in Apax Digital L.P. Hamilton Lane makes this recommendation considering the General Partner's qualifications and PSERS' overall investment guidelines.

This recommendation is given solely for the benefit of PSERS and cannot be relied upon by other investors, considering an investment in the Fund, since their needs, objectives and circumstances may not be identical to those of PSERS. The scope of this recommendation is limited to the investment merits of the Fund. Hamilton Lane does not provide legal or other non-investment-related advice.

Sincerely,

Michael Koenig,
Managing Director

Corina English,
Vice President