



Public Investment Memorandum

Apax X USD, L.P.

Private Equity Fund Commitment

Darren C. Foreman, CAIA
Director, Private Markets

Luke M. Jacobs, CFA
Manager, Private Markets

November 18, 2019



Recommendation:

PSERS Investment Office Professionals, together with Hamilton Lane Advisors, L.L.C. (“Hamilton Lane”), recommend to the Board a commitment of up to \$150 million to Apax X USD, L.P., (“Apax”, or the “Fund”).

Apax Partners LLP (the “Firm”) was formed in 1969 and based in London. The Firm has raised over \$50 billion since 1981. Apax has seven offices around the globe, staffed by 123 investment professionals. Apax has established this Fund with a target of \$10.5 billion in capital commitments.

Firm Overview:

Apax is a leading global private equity advisory firm with seven offices around the world. The two main hubs are London and New York alongside regional offices in Munich, Mumbai, Tel Aviv, Shanghai and Hong Kong. Apax has a large investment team of 123 investment professionals spread globally. Of the staff that is responsible for investing Apax X, approximately 40% are based in New York, (including Co-CEO Mitch Truwit), approximately 40% are based in London (including Co-CEO Andrew Sillitoe) and approximately 20% are based across the other Apax offices. Apax often staffs due diligence on deals across multiple offices in order to use the relevant sub-sector expertise on a particular investment opportunity. Apax estimates that around two thirds of Apax funds’ investments since 2010 have leveraged Apax’s global platform. The combination of a global platform and a large investment team generates a large deal flow, which is a prerequisite to being selective and maintaining investment discipline, especially in a high valuation environment.

Fund Size:

The Fund is seeking Limited Partner equity commitments of up to \$10.5 billion, with a hard cap of \$11 billion.

Investment Strategy:

Apax focuses on investments in four core sectors: Technology & Telecommunications, Services, Healthcare and Consumer. The Apax funds have historically delivered strong returns across all four sectors.

The Apax Sectors represent only a portion of global GDP. This means that Apax focuses on only a select part of the market but is sufficiently diversified in its areas of expertise to retain flexibility. The Apax funds can adjust sector weightings to reflect the relative attractiveness of each sector through the investment cycle. For example, in recent years, Apax funds have invested more capital in attractive tech and digital sub-sectors such as IT services and less capital, particularly in Apax IX, into the consumer sector, which is largely reflective of the challenges and uncertainties faced by the retail industry.

Within the four sectors, Apax seeks to identify attractive “sub-sectors” that display unique characteristics or compelling investment themes. Apax often can drive repeat success by investing in a proven sub-sector strategy over time and across multiple geographies. In each of Apax VIII and Apax IX, approximately 60% of the capital has been invested in six core sub-sectors (software, IT services, digital marketplaces, route-based logistics/distribution, medical devices, and outsourced sales and marketing services). Apax’s sub-sector focus is designed to allow the investment team to generate “alpha” while reducing risk. Through repeat success in a targeted sub-sector, the investment team can develop the capabilities needed to better calibrate the risks and the achievability of post-acquisition plans. The focus on a number of different sub-sectors has the added benefit of flexibility and diversification.

Apax’s sector track record and sub-sector focus helps the investment team to spot trends early and develop strategies to transform and grow businesses. It also generates differentiated deal flow that can



be less heavily competed than other opportunities. As an example, since 2014, 51% of invested capital was in deals that were bilateral transactions, which involved no competition, and 36% included limited competition.

Apax's global platform provides competitive advantages, including: larger deal flow allowing for more discipline and selectivity over investments; opportunities for value arbitrage; an ability to understand global forces in Apax's sectors; help in driving internationalization of portfolio companies; and broader exit opportunities.

The keys to Apax's investment strategy are:

- **Sector Expertise** - Apax has decades of sector-driven investing experience. Apax X will continue the Apax funds' established strategy of investing in buyouts globally across the Apax Sectors: Technology & Telecommunications, Services, Healthcare and Consumer. These sectors represent only a portion of global GDP. This means that Apax focuses on only a select part of the market but is sufficiently diversified in its areas of expertise to retain flexibility and adjust sector weightings to reflect the relative attractiveness of each sector through the investment cycle. The Fund will invest in the four core sectors without any pre-determined allocation and will seek to retain the flexibility necessary to react to market conditions and exploit opportunities as they arise. For instance, Apax IX has invested less capital in the Consumer sector (largely reflective of the current challenges faced by the retail industry) whereas more capital has been invested into relatively more attractive technology investments. Apax's long-standing experience in each of its four core sectors, combined with the size of its team, provides a number of advantages. These include: i) the ability to generate a large volume of deal flow allowing increased investment discipline and selectivity; ii) the expertise to form industry insights and assess risk/reward more closely; and iii) the capability to drive portfolio company value creation.
- **Geographic Flexibility** - Apax has a long-standing presence and investment experience in both North America and Europe, having been transatlantic since the early days of its nearly 50-year history. Carried interest is awarded globally which helps drive this co-operation and create an environment where staff collectively benefit from all deals. Capital deployment may vary considerably by geography from year to year as the Firm uses its geographic flexibility to try to identify attractive opportunities within its geographic footprint. Apax anticipates that Apax X will invest approximately 35-50% of its capital in each of Europe and North America, and approximately 10-15% in the rest of the world.
- **Differentiated Investment Strategy** - In recent years, the private equity sector has experienced record high valuations for assets, driven by low interest rates, an abundance of cheap debt and an ample supply of capital. There are signs that conditions are becoming less favorable in certain regions, and Apax does believe it is unlikely that the recent investment environment will continue in the long term. Apax seeks to navigate the current high valuation environment by: i) focusing predominantly on entry multiples to guide the pricing of new investments, ii) turning down investment opportunities when they do not meet the required rate of return standard, and iii) actively targeting businesses that can be transformed or repositioned, thereby shifting the investment risk from uncontrollable market factors to more controllable execution factors. Apax aims to maintain the discipline of a constant investment quality bar and does not recommend the deployment of capital to meet a targeted investment rate. The rate of investment of Apax funds in prior years has varied significantly as a result. Investments made in the last two global Apax Buyout Funds, spanning the years 2012 to date, have very often been "transformative" or "value-added", where the sources of value creation were driven by all three key levers (EBITDA growth, cash generation and multiple expansion) and where the asset at exit is repositioned as intrinsically more valuable. Apax' Operational Excellence Practice (OEP) is a team of operators organized along functional business lines (i.e. Human Resources, Digital Analytics, Procurement, Supply Chain Management, ESG, etc.). The OEP works on projects within portfolio companies to seek positive change to revenue and EBITDA.



Investment Team:

The following list represents the individuals who will be dedicated to the Fund as well as Apax senior executives who will be involved in overseeing the successful execution of the Fund (as of 06/30/19):

Name	Title	Yrs. Experience Firm/Total	Prior Experience
Andrew Sillitoe*	Co-CEO	21 / 25	LEK
Mitch Truwit*	Co-CEO	13 / 22	Orbitz Worldwide, priceline.com
Seth Brody	Partner	11 / 21	Razorgator, Orbitz Worldwide
Gabriele Cipparrone	Partner	16 / 19	McKinsey & Co.
Roy Mackenzie*	Partner	16 / 25	McKinsey & Co.
Salim Nathoo*	Partner	20 / 25	McKinsey & Co.
Alex Pellegrini	Partner	19 / 21	Merrill Lynch & Co.
Shashank Singh	Partner	15 / 19	Monitor Company
Jason Wright	Partner	19 / 24	GE Capital
Richard Zhang	Partner	11 / 26	McKinsey & Co.
Zehavit Cohen	Partner	13 / 29	IDB Group, Chase
Dr. Steven Dyson	Partner	19 / 21	McKinsey & Co.
Frank Ehmer	Partner	19 / 19	Highbridge Zwirn
David Kim*	Partner	19 / 28	Butler Capital
Emilio Voli*	Partner	18 / 30	McKinsey & Co.
Rohan Haldea	Partner	12 / 17	Bain Capital
Tom Hall	Partner	20 / 29	Warburg, Deutsche Bank
Ashish Karandikar	Partner	12 / 19	Morgan Stanley

*Member of the Investment Committee

Investment Instruments:

Apax will seek to make control-oriented equity investments.

Apax's Strength's:

Apax's global platform is important to differentiated sourcing, selection, value creation, and exit with respect to Apax X's investments. Some of the advantages that Apax's global platform aims to bring include:

- **Global Value Arbitrage** - The Fund has the ability to seek pockets of relative value within Apax's four core sectors, by identifying investments in less popular or less in-demand geographies in sub-sectors it knows well.
- **Understanding Global Forces** - Apax has the ability to understand global forces (e.g. digital transformation) and leverage this understanding to seek investment opportunities in specific sub-sectors and repeat this across multiple geographies.



- **Global Exits** - the ability to enhance exit opportunities due to presence and relationships across global markets.

Investment Highlights:

- Operational Excellence Practice
- Strong Performance History
- Distinctive Culture
- Experienced Team Leadership

Investment/Risk Considerations:

- Macro Environment in Geographies They Invest In
- Larger Fund Offering

PSERS History & Performance Analysis:

This will be PSERS' third commitment to an Apax fund. PSERS has committed \$273M to Apax Europe VII in 2007 and \$100M to Apax Digital Fund in 2017. Apax Europe VII, a 2007 Vintage was invested during the Global Financial Crisis (GFC). Due to this the Net IRR and MoC (multiple of cost) is lower than what was anticipated. However, the Apax Funds that were raised after the GFC have done well on an absolute basis. Apax VIII has a 15.1% Net IRR and a Multiple of Cost (MoC) of 1.7x and Apax IX has a 27.5% Net IRR and an MoC of 1.5x as of June 30, 2019. Apax Digital is a 2017 vintage year fund and is out of the J-curve reporting a 26.0% Net IRR as of June 30, 2019.

The table below is as of 06/30/19:

Fund (\$mm)	Portfolio	Vintage	Commitment	Contributions	Distributions	NAV	Net IRR	MoC
Apax Europe VII, L.P.	PE	2007	227	289*	325	42	4.6%	1.3x
Apax Digital, L.P.	PE	2017	100	23	0	23	26.0%	1.3x
Total			\$ 327	\$ 312	\$ 325	\$ 65	4.7%	1.3x

*Contribution amount is greater than commitment amount because of FX effect and recycling.

The twenty-one Equity Partners at Apax average 23 years of professional work experience and average 16 years with the firm. They have invested €23 billion and have a 3.0x Multiple of Cost and a 32% Gross IRR on their investments which were realized. Apax Co-CEO's Andrew Sillitoe and Mitch Truitt have done an excellent job upgrading the team since they took over leadership in 2015. The deal team members responsible for investments with good performance were retained while the underperformers were let go. Additionally, Apax has raised the quality bar around any potential new investment in the consumer sector.

Portfolio Fit:

A commitment to the Fund will give PSERS' Private Markets portfolio, specifically in the private equity space, exposure to the larger end of the buyout market. A commitment to the Apax X fund will be allocated to the Private Equity sleeve of PSERS' Private Markets portfolio. The table below summarizes PSERS' projected Private Equity exposure as of June 30, 2019 (in millions):



Investment Type	Market Value ¹	%	Unfunded ^{1, 2}	%	Total Exposure	%
Private Equity	\$5,579	64.5%	\$3,707	74.4%	\$9,286	68.1%
Special Situations	\$1,181	13.6%	\$621	12.4%	\$1,802	13.2%
Venture Capital	\$1,078	12.5%	\$591	11.8%	\$1,669	12.2%
Internal Co-invest	\$816	9.4%	\$67	1.3%	\$883	6.5%
Total	\$8,654	100.0%	\$4,985	100.0%	\$13,640	100.0%

¹ As of June 30, 2019; ² Includes commitments approved through October 2019.

Investment Committee Disclosure:

Relationship with Hamilton Lane:	Hamilton Lane will not be committing any discretionary capital to the Fund, but other advisory clients besides PSERS will be committing to the Fund.
Introduction Source:	PSERS has been an investor with Apax since 2007
Placement Agent:	Yes, paid directly by the General Partner
PA Political Contributions:	None Disclosed
PA Presence:	None
Potential Conflicts:	None Disclosed
History with PSERS:	Yes, please see "PSERS History & Performance Analysis"
PSERS Allocation Implementation Committee Approval Date:	November 18, 2019

Oversight Responsibility:

Investment Office:	Charles J. Spiller Deputy CIO, Non-Traditional Investments Darren C. Foreman, CAIA Director Luke M. Jacobs, CFA Manager
External Consultant:	Hamilton Lane



Hamilton Lane

September 3, 2019

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

Re: Apax X USD, L.P.

Dear Trustees:

Apax Partners LLP ("Apax") was founded in 1969 and is currently led by Andrew Sillitoe and Mitch Truweit, who were elected as Co-CEOs by the Firm's Equity Partners in 2013 and reelected in 2016. The General Partner employs 21 Equity Partners who are supported by over 200 other employees primarily located in London and New York. In addition to its flagship buyout vehicles, Apax manages an Israeli mid-market buyout fund, a dedicated digital growth and buyout fund and a listed vehicle for employees to invest in existing or future investments. The flagship fund's investment team comprises 89 investment professionals who primarily operate as part of the following sector verticals: consumer, healthcare, services and technology & telecommunications. Apax's investment team works alongside the Operating Excellence Professionals ("OEP") and the Capital Markets Practice ("CMP") to maximize value creation across Apax's investments. The OEP is a team of functional experts who assist the investment professionals in developing strategic plans and work with portfolio companies on selected projects. The CMP team leads the execution of debt and hedging transactions across the Apax portfolio and leads Investment Committee discussions related to capital structure and downside risk mitigation. The OEP and CMP are involved in all stages of a deal's life and are fully integrated with the same compensation and incentive systems as the other members of the investment team. Apax is targeting \$10.5 billion in commitments for, Apax X USD, L.P. (the "Fund"). Apax held first close in July 2019 and expects to hold a final close in Q1 2020. The General Partner will commit at least 2% of commitments to invest in the Fund.

Consistent with the General Partner's prior funds, the Fund will target buyout investments in upper middle-market companies primarily in Europe and North America. While the General Partner follows a sector-focused approach, the flexibility of the Fund's global mandate allows Apax to pursue sector trends without geographic constraint. Apax seeks to leverage the team's reputation, global professional networks and local presence through six investment offices to source investment opportunities. The sector-specialized investment team is expected to continue to drive proactive deal sourcing; within the four target sectors, the General Partner's dedicated teams seek to identify attractive sub-sectors that display unique characteristics or compelling investment themes and proactively track acquisition targets. Given the size of its target opportunities, Apax will likely source a number of investments through intermediated processes with a preference for targets where it has a differentiated angle in company and/or sector knowledge. The General Partner seeks to create value primarily through EBITDA growth by operational improvements. The General Partner typically focuses on accelerating organic growth, improving the companies' e-commerce and digital capabilities, optimizing the cost structure, strengthening management teams, supporting international expansion, optimizing the financing structure, pursuing accretive add-on acquisitions and positioning investments for exit. Apax has generated mixed net performance in prior funds; the General Partner continues to focus on boosting the net returns, increasing its fund-level credit facility in order to mitigate the gross to net spread.

Apax X USD's investment thesis can be summarized as follows:



Hamilton Lane

- Longstanding General Partner with deep knowledge and experience in target sectors and markets
- Value creation facilitated by a growing operations team with expertise in digital enhancement
- Attractive gross performance across prior funds despite high volatility of returns at the deal-level

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 initial review was completed March 8, 2019; the on-site due diligence was conducted March 8, 2019; the Fund was approved by Hamilton Lane's Investment Committee on April 1, 2019, a performance addendum was completed August 28, 2019 and the recommendation to PSERS was issued September 3, 2019
- 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
- Detailed operational due diligence, including interviews with Apax's back office team to review the controls and processes surrounding the firm's finance, fund administration, tax, legal, compliance, IT, HR, and accounting functions
- 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 Markets Partnership component of the portfolio

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

John Stake – Principal, Bala Cynwyd Office
Cyndie Guenoun – Analyst, London Office
Daniele Lauretti – Analyst, London Office

Based on the above, Hamilton Lane recommends that PSERS commit up to \$150 million in Apax X USD, 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,
Chief Client Officer

Corina English,
Principal