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The following pages are a collection of interesting facts and considerations on various topics related to entrepreneurship, start-ups and innovation. I have tried to summarize this in 20 pages after reading a significant amount of material on these fascinating subjects. There are probably no original thoughts in this memo, nevertheless some of the considerations provided may sound a bit provocative, but this was done to stimulate the reader's thinking about these interesting topics (and to keep the memo short).

Overall I think studying how great entrepreneurs operate and how top venture capitalists select their investments is useful to become a better investor also in mature businesses (after all every mature business has once been a start-up and many of its traits and characteristics were set at the beginning).

Finally according to Ray Kurzweil's Law of Accelerating Returns of human history, the amount of technological changes that occurred between 1750 and 2015, will probably take place in the next 20 years or so (since progress occurs at an ever faster rate in more advanced societies)<sup>1</sup>. This implies that technological innovation will become increasingly important for investors, regardless of their investment approach.

## **Key questions I have been trying to address**

1. Why, from an investment and business perspective, is it important to understand (i) what is happening in Silicon Valley today and (ii) which are the main drivers that over the last 50 years have led to Silicon Valley's unquestionable dominance (vs. other parts of the world) in generating new tech businesses and innovations?
2. What are the key traits and characteristics of great entrepreneurs over the last couple of centuries?
3. How do top venture capitalists select the start-ups to bet on?
4. Would Warren Buffett be studying Silicon Valley "tech companies", if he was 30 years old today?
5. With specific reference to tech-related innovations and the start-up world discussed in this memo, which are the important questions that an investor should be asking herself today?

## **Selected books that have inspired the considerations contained in the following pages**

1. [Zero to One: Notes on Start-ups, or How to Build the Future](#) by Peter Thiel and Blake Masters
2. [The Hard Thing About Hard Things: Building a Business When There Are No Easy Answers](#) by Ben Horowitz
3. [The Innovators: How a Group of Inventors, Hackers, Geniuses, and Geeks Created the Digital Revolution](#) by Walter Isaacson
4. [Technological Revolutions and Financial Capital](#) by Carlota Perez
5. [Venture Capitalists at Work: How VCs Identify and Build Billion-Dollar Successes](#) by Tarang Shah and Shital Shah
6. [The Change Makers: From Carnegie to Gates, How the Great Entrepreneurs Transformed Ideas into Industries](#) by Maury Klein
7. [The Myth of the Robber Barons](#) by Burton W. Folsom
8. [Start-Up: What We May Still Learn From Silicon Valley](#) by Herve Lebret
9. [Red Wired: China's Internet Revolution](#) by Sherman So, J. Christopher Westland
10. [America's Most Successful Start-ups](#) by Oliver Samwer (Rocket Internet founder) and Max Finger
11. [The Innovator's Dilemma](#) by Clayton Christensen
12. [In the Plex - How Google Thinks, Works, and Shapes Our Lives](#) by Steven Levy
13. [Steve Jobs](#) by Walter Isaacson
14. [Outliers](#) by Malcom Gladwell
15. [Antifragility](#) by Nassim Taleb

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<sup>1</sup> This was mentioned in a recent article "The AI Revolution; The Road to Superintelligence" by Tim Urban

1. Why, from an investment and business perspective, is it important to better understand (i) what is happening in Silicon Valley today and (ii) which are the main drivers that over the last 50 years have led to Silicon Valley's unquestionable dominance (vs. other parts of the world) in generating new tech businesses and innovations?

A) Putting Silicon Valley's tech revolution into an historical context

According to Carlota Perez, since the industrial revolution in the 2<sup>nd</sup> half of XVIII century the world has gone through 5 major technological revolutions (which tend to occur every 50 years or so), which had a significant disruptive impact on the economy and on society as a whole. Although the classification contained in the table below is by definition arbitrary, it helps to put into perspective the importance of the last one, the so-called "Age of Information and Telecommunications" started with the announcement of the Intel microprocessor in 1971, which led to many technological breakthroughs including the PC, the Internet and the smartphone. The centre of the 5<sup>th</sup> technological revolution, the Age of Information and Telecommunications, is Silicon Valley in the US an area approx. 30 miles long and 15 miles wide with a population of 3-5m people.

*Table 2.1 Five successive technological revolutions, 1770s to 2000s*

<i>Technological revolution</i>	<i>Popular name for the period</i>	<i>Core country or countries</i>	<i>Big-bang initiating the revolution</i>	<i>Year</i>
FIRST	The 'Industrial Revolution'	Britain	Arkwright's mill opens in Cromford	1771
SECOND	Age of Steam and Railways	Britain (spreading to Continent and USA)	Test of the 'Rocket' steam engine for the Liverpool-Manchester railway	1829
THIRD	Age of Steel, Electricity and Heavy Engineering	USA and Germany forging ahead and overtaking Britain	The Carnegie Bessemer steel plant opens in Pittsburgh, Pennsylvania	1875
FOURTH	Age of Oil, the Automobile and Mass Production	USA (with Germany at first vying for world leadership), later spreading to Europe	First Model-T comes out of the Ford plant in Detroit, Michigan	1908
FIFTH	Age of Information and Telecommunications	USA (spreading to Europe and Asia)	The Intel microprocessor is announced in Santa Clara, California	1971

B) Silicon Valley as a centre of innovation / entrepreneurship. How important is it and how does it compare with the rest of the world?

1. Silicon Valley as a producer of billion dollar tech start-ups: according to Hervé Lebret's Start-up book written in 2007, it is quite easy to come up with a list of 50 companies based in Silicon Valley in the software & hardware sector that were set up in the previous 40 years and in 2007 had a market cap of >\$1bn, whereas in the whole of Europe (with a population probably ~100x that of Silicon Valley) he could come up with only 9 companies in the software and hardware industry, set up in the previous 40 years and which had a market cap >\$1bn<sup>2</sup>. This is probably a simplistic approach, but it effectively illustrates Silicon Valley's clear leadership vs. Europe in terms of offering the best entrepreneurial ecosystem for tech start-ups. I have not updated the data, but I suspect that today the difference has probably widened
2. Silicon Valley as a creator of wealth and jobs through creative destruction: A 2012 report, sponsored by the venture capital firm Sequoia Capital and focused on Stanford University, estimated that 39,900 active companies can trace their roots to Stanford University in Silicon Valley. If these companies collectively formed an independent nation, its estimated economy would be the world's 10<sup>th</sup> largest. Extrapolating from survey results, those companies have created an estimated 5.4 million jobs and generate annual world revenues of \$2.7 trillion. It is worth noting that if Silicon Valley overall appears to create a tremendous amount of value creation and new jobs, the attrition rate (i.e. the number of start-ups that fail and go bankrupt) appears to be higher (30-50%) than in other areas such as Belgium in Europe (9%)<sup>3</sup>. This may appear counterintuitive, but in a way it shows how capitalism creative destruction works positively for the system as a whole: Silicon Valley's entrepreneurial and risk taking culture has provided a unique trial and error environment which combined with a sort of "peer pressure to think big" has lead over time to great benefits to society as a whole in many different ways such as better products (e.g. Google search, Apple's iPhone etc.), lower prices for consumers (e.g. Amazon's store), and new jobs
3. A list of some of the great companies set up in Silicon Valley: the following list provides a quick overview of the size and presence of Silicon Valley's companies across a wide variety of sectors. One should not underestimate also the inevitable impact of Silicon Valley in terms on business culture and way of doing things: more informal way of doing business; flat, decentralised and flexible organizations; greater power to the individual as both a worker and a citizen, unprecedented use of continuous and pervasive means of communication (think Twitter, Facebook, LinkedIn) etc.

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<sup>2</sup> SAP, Logitech, Dassault Systèmes, Business Objects, ARM Holding, Soitec, CSR, Autonomy, Gemplus

<sup>3</sup> These studies on attrition rate have been mentioned in "Start-Up: What We May Still Learn From Silicon Valley" by Hervé Lebret

Listed Silicon Valley Companies (data in USDm)

Company	Short Business Description	Year Founded	Current Market cap	2013 Sales	2000 Sales	2000-13 Sales CAGR	Stock price decline from high to low in 2000-03	Stock price increase from 2002-03 low until today
Hewlett-Packard	Technology Hardware and Equipment	1939	74,592	112,298	48,870	7%	(86%)	278%
Intel	Semiconductors	1968	177,735	52,708	33,726	3%	(83%)	184%
Apple	Technology Hardware and Equipment	1977	656,921	170,910	7,983	27%	(83%)	12,228%
Oracle	Business Software	1977	190,541	37,180	10,231	10%	(84%)	498%
Adobe Systems	Business Software	1982	35,829	4,055	1,266	9%	(81%)	771%
Intuit	Business Software	1983	25,118	4,171	1,037	11%	(75%)	678%
Cisco Systems	Technology Hardware and Equipment	1984	142,107	48,607	18,928	8%	(90%)	242%
Gilead Sciences	Pharma, Biotechnology and Life Sciences	1987	154,201	11,202	196	37%	(58%)	6,474%
Yahoo!	Online Media + Alibaba Stake	1994	47,102	4,680	1,110	12%	(97%)	1,140%
eBay	Online Auction + Paypal	1995	69,113	16,047	431	32%	(78%)	682%
Netflix	On-demand Internet Media	1997	19,839	4,375	36	45%		
Google	Search Engine and Other Technologies	1998	338,127	59,825	19	86%		
salesforce.com	Business Software	1999	36,699	3,050	0	n.m.		
LinkedIn	Social Media	2002	28,204	1,529	0	n.m.		
Tesla Motors	Automobiles and Components	2003	25,911	2,013	0	n.m.		
Facebook	Social Media	2004	216,727	7,872	0	n.m.		
Lending Club	Peerto Peer Lending	2006	8,316	98	0	n.m.		
Twitter	Social Media, Blogging	2006	25,113	665	0	n.m.		
<b>Sub-Total</b>			<b>2,272,195</b>	<b>541,285</b>	<b>123,834</b>			

2 important tech companies based in Seattle (but in many ways associated with Silicon Valley)

Microsoft	Software	1975	388,980	77,849	22,956	10%	(65%)	128%
Amazon	Online Retailer, Cloud-based Services, Media	1994	137,480	74,452	2,762	29%	(95%)	5,289%
<b>Total</b>			<b>2,798,656</b>	<b>693,586</b>	<b>149,552</b>			

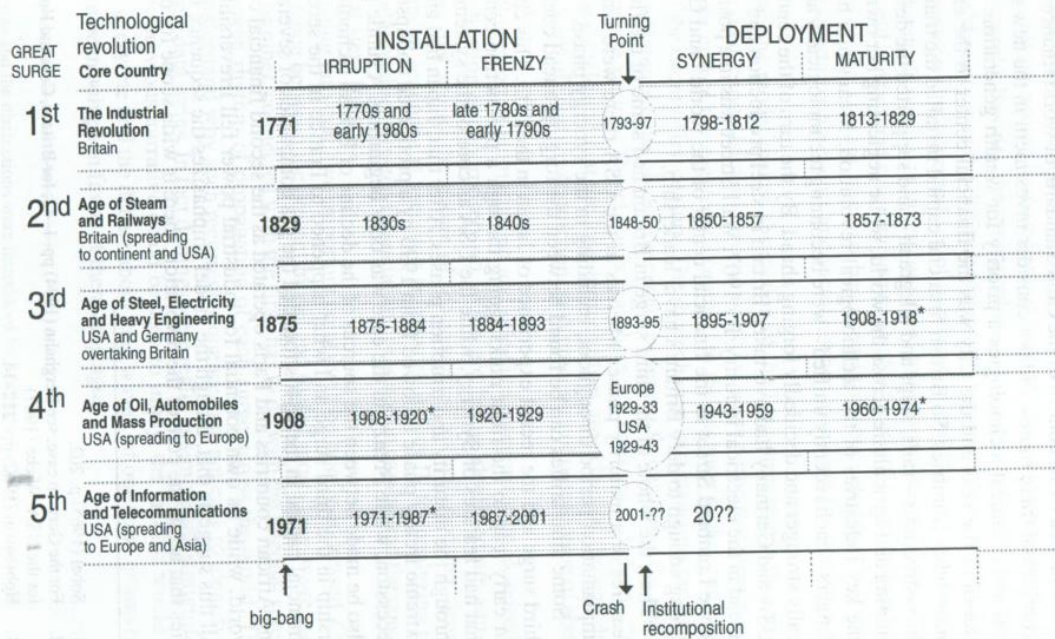
Private Silicon Valley Companies (data in USDm)

Company	Year Founded	Estimated Value <sup>(1)</sup>
SpaceX	2002	5-10,000
Dropbox	2007	8,000
AirBnB	2008	13,000
Cloudera	2008	2,000
Uber	2009	18,200
Square	2009	6,000

(1) Based on publicly available information on latest financing round

It is quite interesting to look at the table above and compare it with the table below from Carlota Perez (2002). According to her theory of major techno-economic revolutions, the Age of Information and Telecommunication (started by the invention of the microchip in 1971) in 2001-2 has entered its Synergy phase, which basically is the period (approx. 20 years), which follows the initial euphoria and subsequent inevitable market crash and in which the new techno-economic paradigm finally pervades into all other industries and becomes the mainstream paradigm. From an investment perspective historically the Synergy period has often been a good time to invest because especially in its early years it combines low prices and great long term growth (on this point see also the last 2 columns of the table above).

Figure 5.2 Approximate dates of the installation and deployment periods of each great surge of development



Note: \* Observe phase overlaps between successive surges.

4. Traditional Industries somehow affected or disrupted by Silicon Valley: the following table shows some examples of traditional industries and companies which have been or could potentially be impacted (and in some cases even disrupted) by tech companies. The purpose of the table is just to show how wide the impact of the so called “tech industry” is on the traditional industries (most of which were part of the 4<sup>th</sup> technological revolution (the Age of Oil, the Automobile and Mass Production). Over time what used to be referred to as the “New Economy” will become the mainstream economy until, if one were to believe in the recurring nature of economic patterns in history, eventually it will be disrupted by a new technological paradigm (which could start somewhere around 2010-30).

Traditional Industries	Examples of Traditional Companies / Institutions	Examples of Disruptive Tech Companies
Retail	Walmart, Target, Marks & Spencer, PC World	Amazon, Ebay, Alibaba, Rocket Internet
Banking & Credit Cards	Citigroup, Mastercard, Visa, American Express	Lending Club, Square, Apple pay, Paypal
Telecom	AT&T, Deutsche Telekom, Telecom Italia	Facebook (WhatsApp), Microsoft (Skype)
Automotive	Volkswagen, Ford, General Motors, Toyota	Tesla, Google (driverless car)
Local Transport	Local taxi companies	Uber, Google (driverless car)
Tourism (tour operators, hotels, airlines)	Kuoni, Tui Travel, Four Season, Accor, British Airways	Airbnb, Expedia, Tripadvisor, Booking.com
Media (TV, Newspapers)	News Corp, New York Times, Mediaset	Facebook, Google, Netflix, Amazon, Twitter, online classifieds (e.g. Rea Group, carsales.com.au)
Book Publishing and Retailers	Pearson, Hachette, Barnes & Noble	Amazon
Yellow Pages	Yell, Pagine Gialle	Google
Music	Universal, EMI	Apple (ipod, Itunes), Spotify
Recruiting	Egon Zendher	LinkedIn, Jobstreet, Info Edge (Naukri)
Space Exploration	NASA	SpaceX

C) Why was Silicon Valley so successful in driving tech innovation?

There are of course a number of reasons for this and many books have been written on the subject<sup>4</sup>, nevertheless I think the following factors played a critical role:

1. In 1950s-70s a unique (in some ways magical) collaborative environment developed between:
  - Universities (in particular Stanford), with a positive attitude to both applied science research and entrepreneurship (this is not so common in universities)
  - Military-related government spending, which especially in the early days provided capital to fund research in a wide range of fields (this has led for example in the somehow accidental invention of the Internet as a mass 2-way communication system)
  - Entrepreneurs, who were often also scientists (and sometimes hippies...)
  - Venture capital, which was started in 1950s and 1960s by pioneers such as George Doriot (who interestingly was French and focused on investing in east-based companies, not Silicon Valley) and Arthur Rock, early investor in Fairchild Semiconductor and Intel, which were among the first major tech companies to be set up in Silicon Valley
2. An entrepreneurial, risk-taking culture where failure is not perceived negatively. This is very different from other geographical areas such as Europe, Japan (and to some extent to the east coast of the US), where there is a stigma related to business failure. Furthermore in Silicon Valley there seems to be a higher concentration of entrepreneurs who have “the ambition to change the world” vs. entrepreneurs who just want to build a viable business to live from.

The two factors above combined with a good rule of law (important for patent protection) and the use of the English language (which helps attracting the best students/entrepreneurs from all over the world) created over time the perfect ecosystem for entrepreneurship and innovation.

In trying to assess if Silicon Valley will continue to dominate innovation it is important to keep in mind that Silicon Valley’s unique entrepreneurial and risk-taking culture and the use of the English language are quite unique and “tough to replicate” competitive advantages of Silicon Valley vs. other parts of the world. This does not imply that so-called “emerging markets” such as India and China will not see a rise in start-ups, innovation and great companies in the next decades or so. In fact the last 15 years or so already prove the incredible potential of these countries: just think about companies such as Infosys in India and Alibaba in China or think about Silicon Valley’s venture capital firms such as Kleiner Perkins and Sequoia which in the past have expanded into India and China.

Nevertheless most of the growth of tech start-ups in emerging countries is likely to be related to business models somehow copied (and/or adapted to local needs) from Silicon Valley<sup>5</sup>, which is likely to maintain at least for the next decade or so its superior rate of innovation in a wide variety of fields as well as its significant impact on the rest of the world (also as a source and network of great foreign entrepreneurs who after studying and working in Silicon Valley go back to their origin countries<sup>6</sup>).

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<sup>4</sup> 2 good books on this subject are (a) “Regional Advantage: Culture and Competition in Silicon Valley and Route 128” by AnnaLee Saxenian (1996) and (b) “Start-Up: What We May Still Learn From Silicon Valley” by Herve Lebert (2007)

<sup>5</sup> This does not imply that copying and / or adapting a business model from one country to another is easy to do. In a start-up, execution is probably far more difficult than having the original idea (which in most cases is not that original either). Rocket Internet is an interesting company from this perspective

<sup>6</sup> On this topic the following book should provide some interesting insights (I have not read it) “The New Argonauts: Regional Advantage in a Global Economy” by AnnaLee Saxenian (2007)

D) The incredibly interconnected world of Silicon Valley: another interesting aspect of Silicon Valley is how its ecosystem of companies and venture capitalists is interconnected. This “network effect” of course further increases Silicon Valley’s moat as a centre of innovation). These are 2 illustrative examples:

1. *Some top venture capitalists and their key investments* (great start-up investments over the last 20 years or so often have been concentrated among the top venture capitalists)
  - i. Don Valentine (Sequoia): Apple, Atari, Oracle, Cisco, Google, youtube
  - ii. Michael Moritz (Sequoia): Yahoo, Paypal, LinkedIn, Kayak, Zappos, Google
  - iii. John Doerr (Kleiner Perkins): Compaq, Netscape, Sun Microsystems, Amazon, Intuit, Google, Twitter
  - iv. Reid Hoffman (Greylock Partners): Paypal, LinkedIn, Facebook, Airbnb, Uber, Groupon
  - v. Peter Thiel (Founders Fund): PayPal, Facebook, SpaceX, Palantir Technologies, Uber, DeepMind
  - vi. Steve Jurvetson / Tim Draper (DFJ Venture): Yahoo, Tesla, Space X, Yammer, SolarCity, Twitter, Tumblr
  - vii. Marc Andreessen (Andreessen Horowitz): Netscape, Uber, Twitter, LinkedIn, Skype, Groupon, Airbnb

Another interesting CEO / investor in many outstanding tech companies worth mentioning (not from Silicon Valley, but South Africa): Koos Bekker (Naspers): Tencent Holdings, Mail.ru, MTN, Avito.ru and other online classifieds businesses

2. *Some Silicon Valley’s start-ups have generated great entrepreneurs. PayPal is probably the best recent example, but there are others such as Fairchild Semiconductor, Netscape and Oracle.* For further detail see also “Introducing PandoMaps: A new interactive tool for mapping start-up ecosystems” – available on the Internet

### The PayPal Mafia

PayPal former founders / employees set up 7 companies >\$1billion companies:

1. Tesla Motors (Elon Musk)
2. LinkedIn (Reid Hoffman)
3. Palantir (Peter Thiel)
4. SpaceX (Elon Musk)
5. Yelp (Jeremy Stoppelman)
6. YouTube (Chad Hurley, Steve Chen, ar Jawed Karim)
7. Yammer (David O. Sacks)



## 2. What are the key traits and characteristics of great entrepreneurs over the last couple of centuries?

### A) A couple of good books on this subject:

- A very interesting study on the personalities of great entrepreneurs over the last couple of centuries is “The Change Makers: From Carnegie to Gates, How the Great Entrepreneurs Transformed Ideas into Industries” by Maury Klein
- A collection of >30 interviews with top venture capitalists called “Venture Capitalists at Work: How VCs Identify and Build Billion-Dollar Successes” by Tarang Shah and Shital Shah

### B) Key traits of great entrepreneurs (i.e. people who built >\$1bn businesses)

Based in particular on Maury Klein’s work as one would expect great entrepreneurs can have very different personally traits: introverts or extroverts; confrontational/aggressive or diplomatic/easy to get along with. Nevertheless they tend to share outstanding levels of the following attributes (often shown clearly from their childhood / teenage years):

- i. *Passion (and ambition) for what they do, which essentially is finding a solution to a user problem* (this is probably the key moat for great entrepreneurs since it enables them to simply work more intensely than their competitors):
  - a. Their business is not a job, but a passion that they talk/think about and work more than 15 hours a day, especially in the early stage of the business (think about Bill Gates, Jeff Bezos, Steve Jobs, Mark Zuckerberg, etc.)
  - b. Money-making is hardly ever the primary objective of great entrepreneurs, this is maybe why the majority of them are not great spenders...
- ii. *Perseverance* against challenges and ability to focus on their “mission”
- iii. *Intelligence combined with integrity*: an entrepreneur of course needs to be very smart (the world is competitive after all), but this needs to be combined with integrity and the ability to inspire trust in others. When an entrepreneur starts a business employees, customers, suppliers and financial backers do not have much more to hold unto than the entrepreneur’s word and reputation
- iv. *Intellectual honesty and ability to face reality and learn from mistakes*. Being an entrepreneur requires a unique combination of stubbornness and humility. In fact in most cases, building a successful business requires an initial long trial and error process followed by an uncertain success maybe 10 years from the start of the business
- v. *Work ethic from an early age*: as shown in the table below most great entrepreneurs have started working or at least experimenting at a very early age in the field that they eventually pursue. This intense focus on a specific field provides them with an advantage over competition (this is in line with the 10,000 hours rule mentioned in “Outliers” by M. Gladwell). Ultimately practice makes one perfect and starting early is key
- vi. *Leadership/Teambuilding*: a great entrepreneur has the ability to lead and attract exceptional individuals with complementary skill sets and build outstanding (and loyal) teams
- vii. *Ability to simplify problems and seeing them from the user perspective* in order to find a better/cheaper solution to a user problem
- viii. *Rule-breaking / disruptive nature*: anyone who builds from scratch a billion dollar business is likely to see the world differently and do things in a different way vis-à-vis competition (e.g. think about Elon Musk in SpaceX vs. Nasa or Tesla vs. traditional car makers or Larry Page/Sergei Brin view of search engines vs. other Internet portals in 2000)
- ix. *Reading*: this is not as provable as some of the other points since it is difficult to get reliable data on this subject, but at least some of these great entrepreneurs are known to be avid readers (e.g. Larry Page, Bill Gates, Elon Musk, Jeff Bezos, Warren Buffett, Larry Ellison, Mark Zuckerberg, Andrew Carnegie, Thomas Edison, Sam Walton)



*What about capital allocation skills among great entrepreneurs?* Great entrepreneurs are not necessarily the most efficient capital allocators, especially when their business is mature and generating a lot of cash (since capital allocation to a certain extent requires a different set of knowledge, skills and temperament). Buffett's great success has been his ability to combine his "insurance/reinsurance free float" machine with his unique capital allocation skills (selecting great business models run by great entrepreneurs/managers and buying them at the right price)

### C) List of great entrepreneurs from 1700s until today

The following is an illustrative list (nothing scientific nor comprehensive, there is a clear bias towards US and Italian entrepreneurs) but it is still useful to notice that (i) 2/3 of these entrepreneurs did not attend or complete college and (ii) 2/3 started working or at least experimenting before the age of 20

Name	Country	Period	Industry	Company	Graduated	Age of first job experience or intense focus on future passion / job
1. Albrecht, Karl and Theo (brothers)	Germany	1920s - 2010s	Retail	Aldi	No	Teenager
2. Armani, Giorgio	Italy	1934 -	Fashion	Armani	No. Dropped out of college (medicine)	Started working at 21 in the fashion industry (first as buyer for Rinascente)
3. Bezos, Jeff	USA	1964 -	Internet retail, Cloud, Media	Amazon	Yes	As a teenager did some farmwork at his grandfather house, but mainly displayed scientific interests and technological proficiency from an early age
4. Buffett, Warren	USA	1930 -	Business conglomerate	Berkshire Hathaway	Yes. Achieved a Master of Science in economics from Columbia (under Benjamin Graham) in 1951 at 21 years of age. In some occasions Buffett has made skeptical comments about the value of college education (and probably considers his Dale Carnegie's Public Speaking Course diploma more important)	11
5. Caprotti, Bernardo	Italy	1925 -	Retail	Esselunga	Yes (law studies)	After finishing law studies is sent by the father (who had cotton business) to the US. His father dies when he is 27. Starts Esselunga with brothers at 32 years of age thanks to the Nelson Rockefeller foundation
6. Carnegie, Andrew	USA	1835 - 1919	Steel	Carnegie Steel Company	No	13
7. Dorsey, Jack	USA	1976 -	Social Media,	Twitter, Square	No. Dropped out of college	13
8. du Pont, Pierre Samuel	USA	1870 - 1954	Automotive	du Pont / General Motors	Yes. Graduated in 1890 at the age of 20	At 22 he and his cousin Francis Gurney du Pont developed the first American smokeless powder in 1892
9. Duke, James	USA	1856 - 1925	Tobacco	American Tobacco (which included , R. J. Reynolds, Liggett & Myers, and Lorillard) and British American Tobacco	No. Hated education	As a teenager he worked in his family business with father
10. Durant, William	USA	1856 - 1947	Automotive	General Motors	No	Worked as a teenager at his grandfather lumber yard
11. Eastman, George	USA	1854 - 1932	Cameras	Kodak	No	14
12. Edison, Thomas	USA	1847 - 1931	Industrial conglomerate	Thomas Edison Incorporated	No	12
13. Ellison, Larry	USA	1944 -		Oracle	No. Dropped out of college twice, but learned programming while attending physics)	Started working in early 20s. Founded his own company at 33
14. Farinetti, Oscar	Italy	1954 -	Retail	Uniero, Eataly	No. Dropped out of college	Early 20s
15. Ferrero, Michele	Italy	1925 -	Ciocolate	Ferrero	No	Little or no education, starts working in the company very young
16. Ford, Henry	USA	1863 - 1947	Automotive	Ford	No	As a teenager working as a mechanic / repairman
17. Gates, Bill	USA	1955 -	Software	Microsoft	No, thought he could learn from college but left disappointed. Nevertheless he believed in college education	Early computer prodigy. Very competitive, knowledge hungry and focused. Started his business as a teenager
18. Gould, Jay	USA	1836 - 1892	Railroad, Telegraph	Elevated Railroad, Union Pacific Railroad, Missouri Pacific Railroad, Western Union Manhattan Elevated	No	16
19. Harriman, E.H.	USA	1848 - 1909	Railroad	Union Pacific Railroad	No	14
20. Insull, Samuel	USA	1859 - 1938	Utilities	Interlinked regional utility companies	No	15
21. Jobs, Steve	USA	1955 - 2011	Hardware and Software	Apple	No. Dropped out of college	Teenager (was already experimenting with computers with Steve Wozniack (another college drop out)
22. Kamprad, Ingvar	Sweden	1926 -	Retail	Ikea	No	Teenager

Name	Country	Period	Industry	Company	Graduated	Age of first job experience or intense focus on future passion / job
23. Kroc, Ray	USA	1902 - 1984	Food Retail	McDonald	No. Hated education	Teenager
24. Land, Edwin	USA	1909 - 1991	Cameras	Polaroid	No	At 18 he was making the first synthetic polarizer
25. Ma, Huateng	China	1971 -	Instant messaging, online games	Tencent	Yes at 22	At 22. At 27 he founded Tencent
26. Ma, Jack	China	1964 -	Internet retail, payment system, online auction	Alibaba	Yes (interestingly failed university entrance exam twice). Got MBA	As a teenager as and English-speaking guide (he was extremely determined to learn English). Founded one of China's first Internet companies at 31
27. McCormick, Cyrus	USA	1809 - 1884	Agriculture machinery	International Harvester	No	At 21 years he worked in this family business with father
28. Murthy, Narayana	India	1946 -	IT outsourcing	Infosys	Yes. Finished Masters at 23 years old	23. Started Infosys at 35 years of age
29. Musk, Elon	South Africa /	1971 -	Tech	Paypal, Tesla, SpaceX	Yes	At 12 sold the computer code for a video game called Blastar for \$500
30. Noyce, Robert	USA	1927 - 1990	Microprocessor	Fairchild Semiconductor / Intel	Yes. Got also Phd	Teenager
31. Ortega Gaona, Armancio	Spain	1936 -	Retail	Inditex	No	Teenager
32. Page, Larry	USA	1973 -	Search engine and other	Google	Yes. Met co-founder Sergei Brin at Stanford. Both Page and Brin consider their early Montessori education critical to their business success	Very early exposure to computers (6 years old). He knew he would start a company from 12 years old
33. Patterson, John	USA	1844 - 1922	Cash register machines	National Cash Register	Yes. But distrusted educated men all his life	23
34. Penney, J. C.	USA	1875 - 1971	Department stores	JC Penney	No. Finest education is that education that spring from demands of the job itself	Teenager: Family farm + local merchant store
35. Premji, Azim	India	1945 -	IT outsourcing	Wipro Technologies	Yes (Bachelor in Electrical Engineering at Stanford). Had to leave college at 21 due to his father death and completed	Took over family business at 21 years of age
36. Rockefeller, John	USA	1839 - 1937	Oil	Standard Oil	Dropped from high school at 16. But then managed to take course at commercial colleges	16
37. Rosso, Renzo	Italy	1955 -	Fashion	Diesel	No. Dropped out of college	15
38. Vail, Theodore	USA	1845 - 1920	Telecom	AT&T / Western Union	No. Hated education	Teenager
39. Vanderbilt, Cornelius	USA	1794 - 1877	Railways, Steamboats	New York Central Railroad, Accessory Transit Company	No. Left school at 11 years. Hated education	12
40. Walton, Sam	USA	1918 - 1992	Retail	Wal-Mart	Yes	8
41. Wanamaker, John	USA	1838 - 1922	Department stores	Wanamaker department stores (top end segment similar to Harrods in London)	No	14
42. Watson, Thomas Sr	USA	1874 - 1956	Computer	IBM	Dropped out of college, but managed to take a course at a commercial colleges	18 - bookkeeper
43. Westinghouse, George	USA	1846 - 1914	Electricity	Westinghouse companies	No. Hated education	14 (family business with father)
44. Woolworth, Frank	USA	1852 - 1919	Department stores	Woolworth department stores (less affluent segment vs. Wanamaker)	Managed to take course at a commercial college. Distrusted college education	21 (family business with father)
45. Zuckerberg, Mark	USA	1984 -	Social Media	Facebook	No. Dropped out of Harvard to focus on Facebook	Started programming in 1990s

*A little digression on education:* it is interesting to notice that most school systems seem to be structured to impede the development of the above-mentioned entrepreneurial traits (Stanford University of course is an interesting exception). This is something to think about although of course by definition most people are not destined to be great entrepreneurs and not everybody should necessarily be educated to become an entrepreneur. On this point Warren Buffett has once stated: "The best education you can get is investing in yourself. But this doesn't always mean college or university. I have two degrees but I don't have them on my wall, in fact I don't even know where they are. I used to be afraid of public speaking, and I realized that I have to do that someday. I do have one diploma I display from Dale Carnegie's Public Speaking Course and it only cost me \$100." Overall I think that the main advantage of some universities such as Stanford is to attract, select and put together smart young people allowing them to experiment and pursue their passions. This sometimes leads to incredible results such as Google (Page and Brin met at Stanford). From an innovation perspective this is more useful than providing a rigid and comprehensive course of studies.

### 3. How do top venture capitalists select the start-ups to bet on?

Although luck certainly plays a critical role in investing in start-ups, successful venture capitalists do have a method in how they select their investments and support them after their initial investment. Interestingly great venture capitalists like Sequoia and Kleiner Perkins have been successful for many decades<sup>7</sup>, which supports the view that (i) despite the inevitable loss making investments, they are relatively good at making sure they do not miss the great investments that more than compensate the rest of the portfolio (most of the returns of any venture capital fund are made by a few good bets) and (ii) great entrepreneurs continue to perceive them as the venture capitalists to go to, who will not simply provide capital but add value to their enterprises.

Most start-ups by definition fail, so good venture capitalist know that it is important to fail small (i.e. invest little capital and gradually scale up only after the business idea is somehow proven to be appreciated by the market)

#### A) Some examples of questions that venture capitalists may ask to assess a potential investment

- i. Product-market fit: does the company offer something that users actually need? Are users actually engaging with the product (think about Facebook and Google even before they started monetizing on their product)? How much are users/customers willing to pay for the product? Does the product offer real value added to the customer? What is the customer experience like? Is the product 10x better than what is available from competition or just incrementally better (and therefore easy to replicate by competition)? Can this small company dominate a small niche of the market that at a later stage can turn into a big market (e.g. Amazon with books and Facebook with Harvard students or Craigslist that for the first 5 years focused only on San Francisco area)? How is the sales & distribution of the product going to work? (some entrepreneurs underestimate the importance of distribution vs. the quality of the product)
- ii. Timing of the market: is the company's product too early or too late for the market and vis-à-vis the current available technology? (Many start-ups in 2000 were simply too early, that is part of the reason why many failed)
- iii. Source and durability of moat: is this start-up doing something fundamentally different from other companies? (Peter Thiel likes to ask: "Tell me something that's true, that almost nobody agrees with you on.", not an easy question but potentially very revealing) What does the start-up need to achieve to enjoy some kind of competitive advantage, and what will this consist of? How are the incumbents going to react to this new start-up? Do they have some conflict of interest in competing with this start-up? (think about Barnes & Noble attempt to fight Amazon, despite having a legacy to its traditional business model or IBM weariness in entering the PC market or newspapers inability to fight online classifieds businesses due to their higher cost structure; Innovator's Dilemma is a great book on this topic)
- iv. Quality of entrepreneur and its team: what motivates the entrepreneur (starting from her personal family history)? Is she fanatical about the product / market? Does she have superior knowledge about this space? How does she spend her time? What did she do before coming up with this idea? Did she have to overcome major challenges and show perseverance? Is the entrepreneur able to hire people smarter than her, and possibly fire them if not good enough for the job? (firing is more difficult than hiring, but in some cases even more important) Does the team show the right chemistry and complementarity? Is the team able to learn from mistakes? Have they done so in the past? Are they concrete entrepreneurs able to solve problems or do they like to talk about business ideas? Are they focused and cautious on how they spend money? (often having too much money for a start-up is a problem since the team spends it without really trying to figure out what customers want). Has the team been working together before setting up the

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<sup>7</sup> According to venture capitalist Kevin McQuillan in 2011 there were approximately 400-500 venture capital funds, of which only 25 made money

start-up and for how long did they know each other? (interestingly PayPal's founders and early employees were friends before setting up PayPal)

It is important to remember that the first 5-10 employees are the ones that will hire the next 100 employees and therefore determine the quality and culture of the firm's employee base (culture is one of the most difficult things to change in both corporates and institutions)

And one last point on the importance of execution: often the difference between success and failure is not due to the quality nor the originality of the initial business idea (most if not all business ideas are not that original and many start-ups change at least to a certain degree their business model during their early life), but it has more to do the execution skills of the team and its ability to learn from early interactions with customers, suppliers, etc. Therefore it is very important to assess the execution skills in a start-up team.

B) Peter Thiel (founder of PayPal and early investor in Facebook) in his book Zero to One lists the following "seven questions that every market-creating business must answer."<sup>8</sup>

i. The Engineering Question: Do you have a breakthrough technology?

Thiel compares going from horizontal progress, which is easy, to vertical progress, which is hard. "Horizontal or extensive progress means copying things that work— going from 1 to n [in a way this is what Rocket Internet is trying to do by replicating/adapting Internet business models invested in Silicon Valley in countries outside US and China]. Horizontal progress is easy to imagine because we already know what it looks like. Vertical or intensive progress means doing new things—going from 0 to 1. Vertical progress is harder to imagine because it requires doing something nobody else has ever done."

In effect, vertical progress is new technology. Breakthrough innovations come from technology that is radically better. *A ten or twenty percent improvement in performance won't do it. It needs to be something like a tenfold improvement in performance to qualify as breakthrough.* For example, Thiel cites as one reason why so many green technology companies failed over the last decade is that the performance improvement of solar panels and so on was modest. Breakthrough technology means that the performance improvement has to be large enough to be genuinely exciting to customers.

ii. The Timing Question: Is your timing right?

You can be too early, or too late. The trick is to time it just right. For instance, "In 2009, it was easy to think that the government would continue to support cleantech: 'green jobs' were a political priority, federal funds were already earmarked, and Congress even seemed likely to pass cap-and-trade legislation. But where others saw generous subsidies that could flow indefinitely, Tesla CEO Elon Musk rightly saw a one-time-only opportunity. In January 2010— about a year and a half before Solyndra imploded under the Obama administration and politicized the subsidy question— Tesla secured a \$ 465 million loan from the U.S. Department of Energy. A half-billion-dollar subsidy was unthinkable in the mid-2000s. It's unthinkable today. There was only one moment where that was possible, and Tesla played it perfectly."

iii. The Monopoly Question: Do you have something no-one else has?

Thiel says: successful market-creating firms, are de facto monopolies. For instance, Google for Thiel is a de facto monopoly in the field of search, with 68% of the market. (Microsoft and Yahoo! have 19% and 10% respectively.) That's a good thing, says Thiel.

In Thiel's perspective, creative monopolies are valuable for society. For Thiel, capitalism is the very opposite of competition. De facto creative monopolies play out in succession. Thus the de facto monopoly of IBM was followed by the de facto monopoly of Microsoft, which in turn was followed by the de facto monopoly of Google. "Monopolies drive progress because the promise of years or even

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<sup>8</sup> Please note that most of the following points have been copied from a Forbes article on Zero to One

decades of monopoly profits provides a powerful incentive to innovate. Then monopolies can keep innovating because profits enable them to make the long-term plans and to finance the ambitious research projects that firms locked in competition can't dream of."

Another reason that people and government regulators can't see the value of monopolies in their true light is that the world we live in today, unlike the board game of Monopoly where the number of properties is fixed, is dynamic: "It's possible to invent new and better things. Creative monopolists give customers more choices by adding entirely new categories of abundance to the world. Creative monopolies aren't just good for the rest of society; they're powerful engines for making it better."

Thiel states his thesis even more strongly. "In the real world outside economic theory, every business is successful exactly to the extent that it does something others cannot. Monopoly is therefore not a pathology or an exception."

Thiel sees task of business as essentially one of creating an enduring monopoly through breakthrough technology.

iv. The People Question: Do you have the right people?

One of the keys to success is passion and that means forming the right team from the start. "As a general rule, everyone you involve with your company should be involved full-time...anyone who doesn't own stock options or draw a regular salary from your company is fundamentally misaligned. At the margin, they'll be biased to claim value in the near term, not help you create more in the future. That's why hiring consultants doesn't work. Part-time employees don't work. Even working remotely should be avoided... If you're deciding whether to bring someone on board, the decision is binary. Ken Kesey was right: you're either on the bus or off the bus."

v. The Distribution Question: Can you sell and market your stuff?

The conventional wisdom in startups is: build a great product and customers will come. Thiel says no. You need a strong sales and distribution network that is built into the operation from the outset. The specific mechanisms will be very different, ranging from low-cost mass market products to multi-million dollar products that have to be sold one by one. But whatever your product, it has to get distributed by strong marketing and sales. "Nerds might wish that distribution could be ignored and salesmen banished to another planet. All of us want to believe that we make up our own minds, that sales doesn't work on us. But it's not true. Everybody has a product to sell— no matter whether you're an employee, a founder, or an investor." Interestingly many investors overestimate the importance of branding vs. the distribution network (shelf space in supermarkets is limited) in providing leading consumer staples companies (P&G, Unilever) with a huge competitive advantage over new competitors.

vi. The Durability Question: Will you be still around in 10 years?

The key question here is: "Will this business still be around a decade from now? Numbers alone won't tell you the answer; instead you must think critically about the qualitative characteristics of your business."

There are four main factors to be considered: (1) proprietary technology; (2) network effects; (3) economies of scale; and (4) strong branding. Firms like Google, Facebook, Twitter have these elements. Zynga and Groupon do not.

The way to build an enduringly successful monopoly is to start by creating a monopoly in a small market, just as Facebook started by dominating the social space at Harvard University or Amazon in the books segment. If you can't dominate even a small market, there is no hope of dominating a large market. "Every startup is small at the start. Every monopoly dominates a large share of its market. Therefore, every startup should start with a very small market. Always err on the side of starting too small. The reason is simple: it's easier to dominate a small market than a large one."

Once you have dominated a small market, then move into related and broader markets. Thus Amazon began with books, and then steadily spread into virtually every product.

What matters is the endgame, not being the first mover. “Being the first mover doesn’t do you any good if someone else comes along and unseats you. It’s much better to be the last mover—that is, to make the last great development in a specific market and enjoy years or even decades of monopoly profits. The way to do that is to dominate a small niche and scale up from there, toward your ambitious long-term vision.... ‘you must study the endgame before everything else.’

vii. The Secret Question: Do you know something nobody else does?

Thiel is persistent in seeking out secrets. “What valuable company is nobody building? Every correct answer is necessarily a secret: something important and unknown, something hard to do but doable. If there are many secrets left in the world, there are probably many world-changing companies yet to be started.”

According to Peter Thiel, Tesla addresses all 7 questions very well, unlike the vast majority of renewable energy start-ups. This should be something to think about.

Another important point to note is that Peter Thiel’s approach focuses on how to build a company “from zero to one”. I think also replicating / adapting successful business models from one country to another (as Oliver Samwer is doing with Rocket Internet) is quite interesting to observe and understand.

C) Some interesting start-up failures that probably deserve to be studied further since often one learns more from failures than successes (source: various articles on the web):

i. Webvan (USA), online grocery set up in 1996 and bankrupt in 2001

*Key issues:* too early business model and excessive spending in too many things. Growing too fast without experimenting and engaging in trial and error phase

*Successful start-ups in the same space:* Instacart, FreshDirect

*Brief description:* Webvan was backed by great investors such as Sequoia and Softbank Capital. It did not fail for lack of a good idea. Rather, it was premature growth that dragged this company under the bus. WebVan’s biggest mistake was, as one Harvard professor wrote, “managing the company from the fiftieth floor when you only have a one-story building.” By creating a mammoth, \$1 billion infrastructure of high-tech warehouses across the U.S., WebVan squandered the \$375 million it raised at IPO on growth that its revenue simply could not justify. The other major problem facing WebVan was the already thin profit margins of the grocery business.

ii. Kozmo.com (USA), online grocery set up in 1998 and bankrupt in 2001

*Key issues:* too early business model. Growing too fast without experimenting in limited geographical areas and learning from trial and error phase

*Successful start-ups in the same space:* Instacart, FreshDirect

*Brief description:* billed by as “the shining example of a good idea gone bad”, Kozmo promised free one-hour delivery of "videos, games, dvds, music, mags, books, food, basics & more" and Starbucks coffee in several major cities in the United States. It was a big hit with its target market, but before long, Kozmo became a victim of its own success. The very thing that made it appealing – free, fast delivery – made the business model unsustainable. It was simply not possible to deliver items that cheap for free and still turn a profit. By the time Kozmo began charging for delivery it was already too late, and the \$280 million in funding was lost.

iii. Boo.com (UK), online fashion store setup in late 1990s and bankrupt in 2001

*Key issues:* too early business model; very poor execution (very slow website; tried to launch in multiple countries right from the beginning)

*Successful start-ups in the same space:* Asos, Yoox, Zalando

*Brief description:* Boo.com showed the world that Internet startup failures could, indeed, go international. The United Kingdom-based online fashion retailer also testified to another startup-killing

habit: using JavaScript doo-dads and quirky Flash-based navigation in order to dazzle and impress instead of fulfilling genuine consumer needs. These tactics make for slow-loading sites today, but they were downright fatal during the dial-up days of 1998-2000. Boo also underestimated the hassles of being a “global company”, such as dealing with the many different languages and tax structures of the various countries it attempted to do business in. The result was all too predictable. After a couple years of lacklustre sales and unmet projections, Boo liquidated its assets in May, 2000 after burning \$135 million in 18 months.

iv. EToys (USA), online toys retailer set up in 1997 and bankrupt in 2001

*Key issues:* spent too much money on advertising

*Successful start-ups in the same space:* Amazon

*Brief description:* eToys.com committed what has come to be known as a major mistake of 90’s-era dot coms: spending tons of money on advertising, regardless of whether there is a market for your product or service. Nevertheless, the mere idea of an online toy retailer was enough to propel the company to a \$166 million IPO in May of 1999. All went well early on, but then after initial crazy valuation, eToys’ stock collapse and eventually their assets were acquired by KB Toys

v. Friendster (USA), social media set up in 2002 and acquired for \$100m by MOL Group in 2009.

*Key issues:* lack of ability to understand what users really wanted

*Successful start-ups in the same space:* Facebook

*Brief description:* Friendster was one of the first social networks. Launched in 2002, it is arguably the start of the modern social networking era. While Friendster looked to have everything in place, it was quickly surpassed by MySpace (launched in 2003), and eventually Facebook. One of Friendster's key flaws was that it truly lacked in its ability to provide a substantial user interactive experience – it lacked for example a news feed, which was a killer app for Facebook (together with others).

It is worth noting that before Facebook was set up in 2004 there were probably around 100 social media websites (e.g. SixDegrees.com, MySpace, Classmates.com), so once again (i) some apparently minor differences in the business model and (i) better execution (and trial and error process) can make a big difference in building a great business vs. failing. Starting first is not necessarily a big advantage.

**4. Would Warren Buffett be studying Silicon Valley “tech companies” if he was 30 years old today**

Quite likely.

First of all it is worth noting that Buffett was one of the first to realize in the early 1990s of the negative impact of increasing competition (and then of the Internet) on media franchises. So despite not investing in Internet companies in the bubble period of 2000, he understood before others the disruptive power of some of them for media businesses like newspapers. Even if one does not invest in Silicon Valley companies, as an investor it is critical to understand their disruptive nature in order to avoid investing in traditional cash generative businesses that will be negatively impacted by Silicon Valley’s new business models (e.g. think about Yellow pages vs. Google).

Secondly despite the well-known aversion of Warren Buffett for hard to predict tech companies, it is interesting to note that some of the so called “tech companies” of early 2000s have become (or are becoming) the blue chips of tomorrow enjoying both significant moat (due to a wide variety of factors such as scale, network effects, consumer habits, unique company cultures, etc.) and therefore at least some degree of predictability.

Here are some examples (please forget for a moment the current pricey market valuations, in a market crash things could change, after all even the so called “nifty fifty stocks” were expensive in the 1960s and then prices came down dramatically in 1970s):

- Amazon: the new Wal-Mart? Amazon is the new low cost retailer (and also many other things). Although Buffett as far as I know has not invested in Wal-Mart he publicly stated that he considers

this one of his biggest mistakes since he knew the retail business very well and had not invested only due a perceived excessive valuation

- Google: the new General Electric in terms of innovation, but with an additional cash generative quasi-monopoly in search engine?
- Facebook: a dominant media player like ABC and Washington Post were 40-50 years ago?
- PayPal (currently owned by EBay, but about to be spun-off): the new American Express? Its dominance in the Internet payment space due to network effects was probably relatively obvious >10 years ago

Having said this it is always very important to clearly assess one's own circle of competence.

**5. With specific reference to tech-related innovation and start-up world discussed in this memo, which are the important questions that an investor should be asking herself today?**

- A) Based on the Perez' technological revolution framework, what could be the next "50 years tech revolution", which could start sometime between 2010 and 2030? (e.g. artificial intelligence, robotics, nanotechnology, bioinformatics or probably something that nobody is thinking about?)
- B) Could countries such as China and India generated a new (or at least somehow comparable) Silicon Valley in the next 10 years? Will these "innovation centres" develop around a university in a similar fashion as Silicon Valley – Stanford? How will they be different from Silicon Valley?
- C) If you have ever invested or considered investing in a start-up, how did the latter and its entrepreneur compare to point 2 and 3 of this memo? How did things develop since you have considered (or made) the investment and why?
- D) Turning to a concrete case, what would need to happen for Rocket Internet (which includes ~100 Internet-related start-ups) to be worth at least \$100bn market cap (assuming a relatively conservative Sum of The Parts valuation in 2025)? How likely is that? Rocket Internet is an interesting case of replicating / adapting existing successful Internet business models to countries outside US and China (mainly emerging markets)
- E) Why after reading IBM's annual reports for decades did Buffett make a \$10bn "tech investment" in IBM (a leading tech company but generally not considered to be at the front end of the new Silicon Valley wave) instead of a company like Google, for example? Which of these 2 companies is more likely to generate the best return in the 2011-2025 period and why?



## **Appendix – Some interesting quotes from entrepreneurs and venture capitalists**

### **Marc Andreessen (Netscape, Andreessen Horowitz)**

“An awful lot of successful technology companies ended up being in a slightly different market than they started out in. Microsoft started with programming tools, but came out with an operating system. Oracle started doing contracts for the CIA. AOL started out as an online video gaming network.”

“With tech — and you see this with a lot of these new entrepreneurs — they’re 25, 30, 35 years old, and they’re working to the limit of their physical capability. And from the outside, these companies look like they’re huge successes. On the inside, when you’re running one of these things, it always feels like you’re on the verge of failure; it always feels like it’s so close to slipping away. And people are quitting and competitors are attacking and the press is writing all these nasty articles about you, and you’re kind of on the ragged edge all the time....”

“The life of any start-up can be divided into two parts – before product/market fit (BPMF) and after product/market fit. When you are BPMF, focus obsessively on getting to product/market fit. Do whatever is required to get to product/market fit. Including changing out people, rewriting your product, moving into a different market, telling customers no when you don’t want to, telling customers yes when you don’t want to, raising that fourth round of highly dilutive venture capital — whatever is required.”

“The key characteristic of venture capital is that returns are a power-law distribution. So, the basic math component is that there are about 4,000 start-ups a year that are founded in the technology industry which would like to raise venture capital and we can invest in about 20.” “We see about 3,000 inbound referred opportunities per year we narrow that down to a couple hundred that are taken particularly seriously.... There are about 200 of these start-ups a year that are fundable by top VCs. ... about 15 of those will generate 95% of all the economic returns ... even the top VCs write off half their deals.”

“Most of the big breakthrough technologies/companies seem crazy at first: PCs, the internet, Bitcoin, Airbnb, Uber, 140 characters.. It has to be a radical product. It has to be something where, when people look at it, at first they say, ‘I don’t get it, I don’t understand it. I think it’s too weird, I think it’s too unusual.”

### **Jeff Bezos (Amazon)**

“I believe you have to be willing to be misunderstood if you’re going to innovate.”

“I think frugality drives innovation, just like other constraints do. One of the only ways to get out of a tight box is to invent your way out.”

“The great thing about fact-based decisions is that they overrule the hierarchy.”

“If everything you do needs to work on a three-year time horizon, then you’re competing against a lot of people. But if you’re willing to invest on a seven-year time horizon, you’re now competing against a fraction of those people, because very few companies are willing to do that. Just by lengthening the time horizon, you can engage in endeavors that you could never otherwise pursue. At Amazon we like things to work in five to seven years. We’re willing to plant seeds, let them grow—and we’re very stubborn.” “We’ve had three big ideas at Amazon that we’ve stuck with for 18 years, and they’re the reason we’re successful: Put the customer first. Invent. And be patient.”

### **Reid Hoiffman (LinkedIn, Greylock Partners)**

“A great founding strategy is contrarian and right. That ensures that, at least for an important initial time, no one is coming after you. Eventually people will come after you, if you’re onto something good.” “It’s so important for early stage companies to avoid competition because you can’t isolate it to one front. Competition affects you on the customer front, hiring front, and financing and business development fronts—on all of them. When you’re 1 of n, your job becomes much harder, and it’s hard enough already. Difficult competition with no edge makes for a war of attrition. People may get sucked in to ruthlessly competitive situations by the allure of the pot of gold to be had. It’s like rushing the Cornucopia in the Hunger Games instead of running away into the forest.”

“Entrepreneurs are often given two pieces of contradictory advice: persistence and flexibility. Have a vision and pursue it through years of people telling you you’re out of your mind. Or, be flexible: look at data, iterate, and change based on the signals you’re getting. There isn’t an actual algorithm. You have an investment thesis about why this project is likely to work and have some outside result, and usually that’s expressed in a set of statements and hypotheses, that if you’re right about, adds up like a logical proof and gives you the output you’re looking for. And you can have varying level of confidence in how these pieces are adding up and supporting your theses.” “The challenge is to follow them both, but know which advice is most appropriate for which situation. You must know how to maintain flexible persistence.”

“It’s not that everyone should start a company, it’s the fact that a career ladder is no longer a strong model for how you do your work and pursue your career. The Good grades -> Good university -> Good career path model has been broken for years, by globalization and technology’s disruption of industry. The model for how to think about your life, career, and work is different. How entrepreneurs think about product market fit, product differentiation, creative risks, all apply to how you, as an individual, live your life.” “The network of people around you is what extends your ability to be effective in terms of expertise and reaching your goals. ...really put yourself out there and get the feedback. ... don’t be afraid to take a risk.”

“Another huge thing to emphasize is the importance of your network. Get to know smart people. Talk to them. Stay current on what’s happening. People see things that other people don’t. If you try to analyze it all yourself, you miss things. Talk with people about what’s going on. Theoretically, startups should be distributed evenly throughout all countries and all states. They’re not. Silicon Valley is the heart of it all. Why? The network. People are talking to teach other.”

### **Ben Horowitz (Andreessen Horowitz)**

“There are so many mistakes...I think probably the most common mistake is trying to be consistent. What happens is you get an idea, you sell people on the idea—investors, the employees—and you get into it and the idea turns out to be wrong. But you want to be consistent and you hold onto it longer than you should...It’s better to be right than consistent. And that’s a very hard thing to learn, particularly early in life.”

“In life, everybody faces choices between doing what’s popular, easy, and wrong vs. doing what’s lonely, difficult, and right. These decisions intensify when you run a company, because the consequences get magnified 1,000 fold. As in life, the excuses for CEOs making the wrong choice are always plentiful.”

### **Steve Jobs (Apple)**

“I’m convinced that about half of what separates successful entrepreneurs from the non-successful ones is pure perseverance.”

“I’m as proud of many of the things we haven’t done as the things we have done. Innovation is saying no to a thousand things.”

"I noticed that the dynamic range between what an average person could accomplish and what the best person could accomplish was 50 or 100 to 1. Given that, you're well advised to go after the cream of the cream.... A small team of A+ players can run circles around a giant team of B and C players."

"We've interviewed people where nine out of ten employees thought the candidate was terrific, one employee really had a problem with the candidate, and therefore we didn't hire him."

"The difference between the best worker on computer hardware and the average may be 2 to 1, if you're lucky. With automobiles, maybe 2 to 1. But in software, it's at least 25 to 1. The difference between the average programmer and a great one is at least that. The secret of my success is that we have gone to exceptional lengths to hire the best people in the world. And when you're in a field where the dynamic range is 25 to 1, boy, does it pay off."

#### **Howard Morgan (First Round Capital)**

"There is no billion-dollar idea, but just billion-dollar execution. Having the vision is no solution. Everything depends on execution."

#### **Michael Moritz (Sequoia)**

"It takes a tremendously long time to build a company of value. In many cases, the best venture returns don't happen in the private phase of the company; they happen in the time that the company is public... "It takes a long time for sales to grow and it takes a long time for true value to be achieved." "People would be staggered at the length of time that we hold investments. It's not uncommon for us to hold investments for 10 years or more. It's certainly not uncommon for the partners at Sequoia to own stock for 15 or 20 years."

"Every single time you write a check you expect, or pay depending on your inclination, for that investment to succeed."

"The venture capital partnership that invests small amounts of money judiciously is almost always going to outperform the venture capital partnership that tries, to use an ugly phrase in the business, 'to put a lot of money to work.'"

