

Strategy, Entrepreneurship & Innovation Disciplinary Task Force Phase I Report of the MaCuDE project¹

P D Jose

Indian Institute of Management Bangalore, India

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Curriculum Report

Strategy, Entrepreneurship & Innovation Disciplinary Task Force

INTRODUCTION

Business schools attempt to train students for contemporary and real-world problems. The business world today is constantly in a flux due the forces of technology and social change. Understanding how much the academic content has traversed to meet the actual requirements of the business or industry' is important given the rapid developments in technology and the consequent evolutions of businesses both in terms of organisational structures as well as business models. These disruptive innovation in turn have impacted both traditional and emerging ventures – with both having to re-examine and revalidate their competitive strategies.

The moot question then is whether b-school curricula and teaching have kept pace with the rapid churn in industries and markets in the real world? The objective of this study was to assess and review the existing state of curricula - specifically on the extent of digitization – in the Strategy, Entrepreneurship & innovation courses that are offered by B Schools and Universities across the globe. Programmes and courses in this discipline were examined and analysed to find the adoption/integration of digitization in the courses/modules. Are the modules dynamic enough to keep pace with changing nature of the businesses? Which are the significant gaps that must be addressed?

The study attempts to analyse the current state of the offerings in the strategy, innovation and entrepreneurship areas by b-schools and universities. The outcome of the project will be to help develop a state-of-the-art curriculum to meet the learning challenges of the digitized era.

THE METHODOLOGY

Two issues have challenged this study; 1) An objective method to determine or identify the extent of digitization in the modules/courses. 2) Accessing the description and details of the courses offered by School/Universities across the globe. The method adopted here was in line with the recommendations of the Discipline Task Force with subject matter experts consulted to identify the terms that will point to or indicate digitization in the courses and modules. After multiple iterations a list of terms representing digitization were identified. The final list had 73 terms which were used to find the digitization level across all the courses and modules. This set of words, named the "Digitization Terms" (see Annexure-I) was used to identify and categorise courses based on the extent of their digitisation content – using the frequency of the appearance of these terms as a proxy for digitisation level. Any module having even one of the terms, i.e., occurrence of a term at least once in the course description/outline is categorized as "Digitized Course". Conversely if the course description had none of the identified 73 terms, it was then alienated as a non- digitized course.

In the second stage we decided to cull out the course details from secondary sources such as the websites of the schools and Universities. It was decided that this process of data gathering would then be augmented by reaching out to faculty of B Schools for the course descriptions wherever accessibility is available. The primary source would be more reliable and give a comprehensive detail of the courses, but the advantages of the secondary source far outweigh the merits of the primary source. The process of getting the course details from the websites was quite a tedious process and fraught with challenges of a different order. Many of the sites did not have the course descriptions available and even if it was existing it was very frugal, just a few sentences only.

DATA COLLECTION

As discussed above the data gathering process had its own challenges. In the initial stage a list of 100 B Schools as per the Financial Times Business School/MBA ranking 2020 was used as the basic source of data or the crux for identifying the courses. The web sites of each of these institutes were examined to identify the degree/master's level as well as undergraduate level courses.

During the first stage of data compilation, we could identify about 300 courses in Strategy, Entrepreneurship & Innovation discipline offered by about 35 B school/Universities in US, Europe and Asia. Nearly all these courses fell under the degree category. The following details were also collected along with the course descriptions/outline, as below:

- Name of the School/University
- Region & Country, where the school/university is located
- Course Title/Name of the Course
- Course Offering as: Core/Elective/Major/Minor etc

Based on these details the schools/universities were categorized as belonging to Cohort – I (top third in the FT ranking list), Cohort – II (middle third in the FT Ranking list) and Cohort – III (Bottom third in the FT list).

After a scrutiny of courses, a shortlist of 550 courses from almost 100 schools, we identified 151 courses having some element of digitisation in its content. One handicap in this case was that a significant number of B Schools/Universities did not have the details of the courses or modules in the public domain and had only a generic reference of the degree or undergraduate program. Most courses were at the Masters/degree level (460 courses.)

A closer examination of the curricula indicates that most courses had only a minor integration of digitization by extrapolating the conceptual basics of the discipline onto tech, high tech ventures/companies or bringing in case studies on successful technology / IT firms as part of the course. However, our research was able to capture some interesting leitmotifs in many of the

course offerings by the schools/universities. These appear to indicate that the academia might be in a stage of transition of considering accommodating digitization in the curricula as per the dynamic demands of the industry.

MAIN DIGITIZATION THEMES IDENTIFIED IN SELECT COURSES²

As mentioned before in most cases introduction of digitisation concepts is limited to extending traditional theories to the context of the existing and emerging technology ventures. Some courses/modules had a higher extent of digitization themes providing a deeper understanding, to identify the specific/distinctive facets for creating sustainable technology-intensive businesses.

Table 1: Rankings of based on the	presence of number of digiti	ized terms in the curriculum of the c	ourse
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Rank	Name of School/University	Course Name	Region	Tier	Degree Level	No. of Digitization Terms
1	National University of Singapore Business School	Technological Innovation	Asia	Cohort 1	Under Graduate	12
2	New York University: Stern	Strategy in Technology Intensive Industries	US	Cohort 1	Graduate	10
3	National University of Singapore Business School	Digital Strategy	Asia	Cohort 1	Under Graduate	10
4	National University of Singapore Business School	Big Data & Business Strategy	Asia	Cohort 1	Graduate	10
4	Harvard Business School	Strategy and Technology	US	Cohort 1	Graduate	9
4	New York University: Stern	Entrepreneurship & New Economy	US	Cohort 1	Graduate	9
7	University of California at Irvine: Merage	Strategy in a Digital Age	US	Cohort 3	Graduate	9
7	IIM Bangalore	Managing Digital Transformations	Asia	Cohort 1	Graduate	9
7	New York University: Stern	Commercialization of Frontier Technologies	US	Cohort 1	Graduate	9
7	Carnegie Mellon: Tepper	Technology Strategy	US	Cohort 2	Graduate	8
7	New York University: Stern	The Business of Platforms, Networks and Two-Sided Markets	US	Cohort 1	Graduate	8
12	New York University: Stern	Disruption, Entrepreneurship & Social Impact	US	Cohort 1	Graduate	7
12	Miami Herbert Business School	Digital Marketing	US	Cohort 3	Under Graduate	7
14	IIM Bangalore	Digital Marketing	Asia	Cohort 1	Graduate	7
14	New York University: Stern	Digitalization and Society: The Fourth Industrial Revolution	US	Cohort 1	Graduate	7
14	Northwestern University: Kellogg	Business Strategy	US	Cohort 1	Graduate	7
14	Stanford Graduate School of Business	Media Entrepreneurship	US	Cohort 1	Graduate	6
14	Carnegie Mellon: Tepper	Digital Marketing and Social Media Strategy	US	Cohort 2	Graduate	6
19	Vanderbilt University: Owen	Digital Marketing Strategy	US	Cohort 2	Graduate	6
20	Emory University: Goizueta	Digital & Social Media Strategy	US	Cohort 2	Graduate	6
21	University of California at San Diego: Rady	Real Estate and the Tech Sector	US	Cohort 3	Under Graduate	6
22	London Business School	Digital Strategy	Europe	Cohort 1	Graduate	6

Note: Rankings based on the presence of number of digitized terms in the curriculum of the course

² Courses having presence of more than 6 digitisation terms from the final list of courses

Some key themes that emerged after analysing each course/module are listed and described below, based on this categorization.

- 1. Information technology and global internet penetration has induced radical changes in the market and operations of the modern businesses like E-commerce, social media, virtual goods, crowd sourced content, affiliate referrals, micropayments and so on. The course (*Entrepreneurship & New Economy New York University: Stern*) delivers the skills and knowledge required to be successful entrepreneurs in the new economy and on using technology to create a sustainable new economy business model. Multiple methods are used for analysing the applications in real business situations, experience sharing with entrepreneurs and Business Plan development for a technology-based business. The core theme stresses on the knowledge aspect of technology/IT, but the methods give more importance on building theoretical bedrocks than on practice. Despite this shortcoming the intent of the module is apt for the discipline.
- 2. A course offering from *Harvard Business School (HBS)* on *Strategy and Technology* explores the unique aspects of creating effective management and investment strategies for technology-intensive businesses. The module examines the firms from start-ups to large high-tech companies that include artificial intelligence, autonomous vehicles, cloud services, e-commerce, social networking, semiconductors, operating systems, streaming media, intellectual property, 5G wireless communications, voice assistants, electronic ink, virtual and augmented reality, video gaming, and blockchain. The module gives insights as to how organizations can create and sustain competitive advantage in new, emerging technologies during the era of high uncertainty.
- 3. The strategic perspective of technology driven firms like computer hardware / software, media, entertainment, telecommunications, and e-commerce was the theme of this module. The focus is to recognize the unique economic characteristics of modern technology-intensive markets and assess the impact on the strategic interactions among firms and consumers using simple but rigorous analytical models, theories, and case studies. (*Technology Strategy Carnegie Mellon*)
- 4. Digitalization and Society: The Fourth Industrial Revolution explores digitalization and the societal impact driven by AI related technology and entrepreneurship. The module uses case studies involving the entertainment and media industries, IoT, ML applications and NLP for an assessment of abstraction and practical specifics. It explores how a digitally interconnected world introduces advantages and efficiencies providing welcomed benefits and whether these benefits deliver trade-offs such as the commodification (and exploitation) of personal data giving rise to information oligopolies, socio economic barriers and fervent disagreement on the role of digital technology. The course aims to construct a working understanding of the

possibilities created by digitalization influence on tomorrow's markets, organizations, and society.

- 5. Digital Marketing is a strategy related hands-on and real-time elective module from IIMB with attention on consumer behaviour in the internet era. Focus is on social media marketing, its impact on the marketing mix, use of crowd sourcing to discover new product ideas, providing customer service through social media channels and allowing consumers to set prices, Search Engine Advertising, use of real time insights to optimize marketing efforts. Introduction to Digital Marketing, Fundamentals of Paid Advertising, Creating Google Ads Account, Video Marketing, Running Live Campaigns, Search Engine Advertising, social Media Strategy, branding in the age of social media, LinkedIn and Twitter Marketing, Facebook Marketing, Online Reputation Management/ Influencer Marketing/ Online PR, Instagram Marketing, Search Engine Optimization, Digital analytics, Digital Psychology for Influencing Consumers
- 6. *Digital Marketing:* a UG course from *Miami Herbert Business School* introduces the principles of digital marketing from both perspectives of theory and practice. Main contemporary digital marketing issues are covered extensively, including search engine optimization, search engine marketing, online advertising, web analytics, email marketing, social media marketing, and reputation management besides forming an appropriate strategy for a digital marketing campaign and using quantitative skills to analyse the effectiveness of such a campaign. Learners grasp critical concepts by working with a local business client, laying out a suitable pre-campaign strategy, implementing and modifying the campaign in real time, and summarizing the campaign results in a meaningful and concise manner when it is over.
- 7. Disruption, Entrepreneurship & Social Impact New York University: Stern The key focus of the course is on the effect of disruptive technologies on society and creation of business opportunities, for entrepreneurs. This is studied through the lens of technologies causing global disruption like AI, machine learning, cybersecurity, carbon capture, sustainability technology, genomics/gene editing, virtual reality, augmented reality. Emphasis is also on to develop skills in scrutinising emerging tech, assess technology diffusion, develop a point-of-view on the market opportunity created, and the approaches to commercialization. ()
- 8. This course analyses the economics of social networks and other networks and examining how networks are formed from the perspective incentives of users the network platform operator and the applications providers that are complementary to the network. Using the main lessons from social networks the module discusses two sided markets. The course looks at other network platforms like, mobile smartphones such as iPhone and Android ones, audio and video distribution networks, digital books distribution networks, the personal computer operating systems market and the payments systems networks, credit cards platforms and in detail the

structure of the Internet the Internet search and advertising markets platforms and network neutrality.

- 9. *Real Estate and the Tech Sector*: This UG course explores the emerging real estate tech sector especially from the perspective of the newly available financial methods, AI approaches, big data, and machine learning technologies which are transforming different approaches and stakeholder's positions in the real estate value chain. The module explicitly focuses on the shifting digital, technology, and financial landscape from the viewpoint of real estate stakeholders. (*University of California at San Diego: Rady*)
- 10. Digital & Social Media Strategy Emory University: Goizueta. The key theme of this course is related to digital marketing strategy and tactics. It provides an understanding and skill in deploying online marketing strategies and tactics like display ads, interactive website content, sponsored search, social media, online distributors, algorithmic search (SEO), affiliate marketing, email marketing, and "group buying" voucher coupon sites. The contribution from this course is relevant to Strategy/Entrepreneurship and Innovation discipline specifically during the technology era as almost all the new economy ventures be it nascent or established use digital marketing strategies for brand building and reaching out to customers.
- 11. A module on *Digital Marketing Strategy* (*Vanderbilt University: Owen*) covers the fundamentals of Internet Marketing, Search Engine Marketing, Email Marketing, E-Commerce Promotions and Online Merchandising. Topics also include creating online promotional campaigns, tracking, and reporting online marketing initiatives, budgeting, and forecasting for online customer acquisition efforts, user interface and design strategies, and understanding key drivers of success for affiliate marketing, search engine marketing, email marketing, and new and upcoming forms of online marketing within virtual worlds, online gaming, and social media. Most of the digitized content for the technology enterprises are involved and both theoretical as well as practical features investigated.
- 12. One of the courses offered by *Carnegie Mellon: Tepper* was a hands-on module on *Digital Marketing and Social Media Strategy*. The module uses real world data, case studies and participation in Google online marketing challenge with focus on Search Engine Optimization, Econo-Mining, Social Media Marketing, Forecasting Demand Using Publicly Available Online Search Data and Crowdsourcing. This theme is significant to the discipline as modern business models are data driven and strategy formulation & execution is heavily dependent on data and analytics in this digital era both for new as well as established firms.
- 13. *Media Entrepreneurship* is a course that examines the current state and larger economic challenges facing the media industry like impact of technology, changing consumer behaviour, the rise of mobile, social networks, big data, real-time metrics, and innovations in digital advertising and distribution channels, and new business models. (*Stanford Graduate School of Business*)

- 14. *Mobile Apps Development, Miami Herbert Business School* offers which covers the fundamentals of programming logic and structured programming principles including problem solving, algorithm design, and program development for mobile environments-with a focus on the Android Platform. The course introduces the requirements and methodologies for developing dedicated and client-server applications that target smartphones, tablet computers, and other mobile devices. Topics include memory management, communications, power systems, APIs, and among others.
- 15. *Public Entrepreneurship* is designed for those who may found, join, or fund private start-up companies that sell to governments, to solve giant problems or who may want to become extreme innovators inside government. Case study approach in the module covers, contemporary technology applications, AI, autonomy, blockchain, sensors, crowdsourcing, platforms, and related topics. (*Harvard Business School*)
- 16. Developing Blockchain Use Case is an elective from Carnegie Mellon: Tepper designed to propose and develop applications or use cases for a campus blockchain. The course introduces blockchain using Bitcoin as an example and further examines the market failure Bitcoin was intended to resolve, the role of cryptography and distributed systems in enabling this new technology to create societal value. The course also discusses the role of cryptography in blockchain.
- 17. Big Data Analytics is a technology course offered as an elective in Strategy from *IIMB* which looks beyond the hype of big data into the opportunities and challenges for businesses. Learners are exposed to coding, the 4 Vs of big data, computations on distributed platforms that facilitate big data analytics, and applications of big data to domains such as finance, transportation, and healthcare as part of this course.
- 18. Strategy in Technology Intensive Industries is an elective course (New York University: Stern) that provides an understanding of the strategic management of technology intensive businesses, role of technology across a myriad of traditional industries. the strategic dynamics of technology markets & leveraging technologies to innovate. Focus of the module includes Cloud Computing, SaaS, Data Centres, Technology Ecosystems, Wireless Networks, Mobile Communications, Fintech Payments Blockchain, OTT Media, Marketing Tech and Advertising Tech ,Role of Big Data and Predictive Analytics.
- 19. Commercialization of Frontier Technologies offers insights on frontier technologies like robotics and mechatronics, software engineering and machine learning. The familiarizes the learners with both the technical aspects of developing mechatronics and robotics inventions and the research and assessment activities that need to be conducted to turn a viable new technology into a marketable product. The module provides a process for assessing the

commercial viability of a new technology and focus on developing a minimum viable product, conducting customer value proposition research, estimating market potential, identifying key proprietary aspects of a new technology, determining the financial value of a new technology, licensing, and royalty fees, and crafting a technology commercialization strategy.

- 20. Managing Digital Transformations explores the technological developments in the digital space and the key aspects of digital transformations through social media; mobile computing; Big Data and Analytics; IoT; Block Chain Technology and Cloud computing while focusing on the impacts of these transformations to individuals, organizations, and societies. This course attempts to explain the different dimensions of Digital transformation and the associated strategies. The objective is to help learners to understand the relationship between strategy and digital transformations, the need to manage radically successful businesses using continuous innovation and appreciate the relevance of new digital platforms such as social media mobility cloud computing and analytics.
- 21. University of California at Irvine: Merage offers a course on Strategy in a Digital Age which stresses on digital technologies, which is emerging as a dominant force in influencing businesses. The digital development, and ongoing digitalization is creating newer waves like blockchain transaction control, true digital manufacturing, cheap robotics and automation, and the application of artificial neural networks to large data sets, etc. This module focuses on applying the basic principles of strategy to these new developments. Study of the underlying digital mechanisms that shape competition over time, not only for firms into hardware, software, and information services but also for those businesses which are transformed by digitalization is central to the module.
- 22. The highly technology intensive module (Artificial Intelligence Applications for Managers, from IIMB) focuses on AI and the related topics right from the history of AI, scope, ethics, autonomy in systems, architecture of robots, concepts of machine learning, applications of algorithms, future of work, Digital Transformation, Digital Goods Open Source Cloud/ IoT, Blockchain, AI as Prediction Machines, Neural Networks and Deep learning, Clustering and Analogical reasoning Reinforcement learning Reinforcement Learning, Algorithmic Bias etc.

DATA ANALYSIS

The data of the courses were compiled in excel which were then subjected to two types of analysis. At the first level we carried out a simple analysis in terms of the number and percentage of the entire courses surveyed, digitized courses in the discipline from the total relevant courses surveyed, classification of the courses based on the geographical region and Country where the School/University was located, categorization of course or programme as Graduate (Masters) &

Under Graduate (UG), Categorization of Schools/Universities into three Cohorts (I, II and III) - based on the rankings & perception of the school/university), Course offering as Core/Elective etc., Area wise Broad Grouping of the courses into Strategy, Entrepreneurship, Innovation etc.

While the percentage analysis would provide a broad indication, the relevance of the digitization or the extent of digitization of each course can be better analysed and visualised using TF*IDF to determine the importance of a word or in this case "digitization term" in a document or corpus³.

FINDINGS, RESULTS AND DATA VISUALIZATION

The first analysis was done using tableau based on the digitization score (D Sore) of each individual courses offered by the different schools and universities. The digitization scores of each of the courses were mapped and the following results were observed:

³ TF-IDF is a statistical measure that assesses how relevant a word is to a document in a collection of documents. This is done by multiplying two metrics: how many times a word appears in a document, and the inverse document frequency of the word across a set of documents.

In this study the word frequency or the digitization frequency analysis was done to measure the most frequently occurring terms in the course description or curriculum using the numerical statistic TF-IDF (term frequency-inverse document frequency). The term frequency is the number of times a particular digitization term (from the list of identified 73 terms) that was occurring in a particular document or any of the course curriculum/description. TF-IDF (term frequency-inverse document frequency) was developed for document search and information retrieval. It works by increasing proportionally to the number of times a word appears in a document, rank low even though they may appear several times as they would not mean much to that document. For example, in our case the word "the", might be appearing innumerable times in the curricula across all the courses but it will have very low rank or relevance but if the word "digital" is examined it is appearing 23 times in the entire set of courses and would be ranked much higher. In short if a particular digitization term is appearing lesser number of times in the whole set of documents, then its rank will be higher in comparison to those terms which are more common across the set of documents (course curricula).

On the other hand, if the term "agile" appears several times in a specific course curriculum or document, but not appearing at all or appearing only a few times in other course curriculum, it possibly means that it's very important. Thus, the word "agile" would probably end up as being significant to show the extent of digitization, as most curricula containing that term would be around digitization.

SI. No.	Course Name	Country	Broad Area of Courses	Degree Level	Individual Course D Score
1	Strategy in Technology Intensive Industries	US	Strategy	Graduate	10.00
			Entrepreneurship &		
2	Technological Innovation	Singapore	Innovation	Under Graduate	9.37
3	Big Data & Business Strategy	Singapore	Strategy	Graduate	9.28
4	Strategy and Technology	US	Strategy	Graduate	9.07
5	Digital Strategy	Singapore	Entrepreneurship & Innovation	Under Graduate	8.44
6	Technology Strategy	US	Strategy	Graduate	8.25
7	Digital Strategy	UK	Strategy	Graduate	8.25
8	Managing Digital Transformations	India	Technology	Graduate	8.04
9	Media Entrepreneurship	US	Entrepreneurship	Graduate	7.94
10	Entrepreneurship & New Economy	US	Entrepreneurship	Graduate	7.85
11	Strategy in a Digital Age	US	Strategy	Graduate	7.82
12	Designing & Leading Organizations	US	Strategy	Graduate	7.76
13	Business Strategy	US	Strategy	Graduate	7.59
14	Public Entrepreneurship	US	Entrepreneurship	Graduate	7.40
15	Real Estate and the Tech Sector	US	Entrepreneurship	Under Graduate	7.25
16	Digital Marketing	US	Strategy	Under Graduate	7.25
17	Digital Marketing and Social Media Strategy	US	Strategy	Graduate	7.14

Table 2: Individual Courses with high digitization Scores – above 7

Table 3: Individual Courses with low digitization Scores – below 1

SI.No.	Course Name	Country	Broad Area of Courses	Degree Level	Individual Course D Score
1	Applied Operations Strategy	US	Strategy	Graduate	0.00
2	Banking: Present and Future	Spain	Entrepreneurship	Graduate	0.00
3	Entrepreneurial Law for Start Ups Planning for Success	US	Entrepreneurship	Graduate	0.44
4	Crowdfunding	US	Entrepreneurship	Under Graduate	0.70

A total of 17 courses had a digitisation course, 15 at the master's level and 4 at the Under Graduate category having a digitization score of more than 7. The curriculum of '*Strategy in Technology Intensive Industries*' has 10 digitization terms (ranks 3rd in standing, as per the number of digitization terms) but the D Score (10) is highest for this module, reflecting that the relevance of digitization of course content is highest among the 151 courses. Likewise, '*Technological Innovation*' which stood at 3rd position, with regard to the number of digitization terms present in the curriculum had the second highest D score of 9.37.⁴ *Big Data & Business Strategy* and *Strategy and Technology* are ranked as 4th and 7th based on the presence of digitization terms in table 1 but

⁴ Interestingly two courses from IIM Bangalore, which were later removed from the sample list "Artificial Intelligence Applications for Managers' & 'Big Data, comprising of 17 & 15 digitized terms respectively had a D Score of 9 and 8.38 respectively coming in the 5th and 7th position in terms of D Score. This indicates that mere presence of digitization terms (having a high number of terms) is not the best or accurate indicator of the magnitude of digitization. The TF-IDF factor thus standardizes such anomalies that might creep in the interpretation of digitization, in a curriculum.

their D Scores are 9.8 and 9.07, which are significantly high (See Table above) A similar pattern is seen across many of the course content. When we examine the module '*Entrepreneurial Law for Start Ups Planning for Success*' the only digitized term present is 'technology' but the D Score of this module is very low at 0.44, apparently as the term 'technology' is seen across 75 courses in our corpus and being so common, it does not possess much relevance of digitization, according to the TF-IDF factoring. To carry this argument forward '*Mobile Apps Development*' and '*Online Business Strategy*' containing just 5 and 4 digitized terms exhibit a good D Scores of 6.93 and 6.81, corroborating the supremacy of D Score as a better measure of digitization of the course content.

Some other general observations on the individual courses are listed as below:

- A total of 130 courses had digitization scores (D Score) in the range 3 to 7 from amongst the total list of 151 courses. Of these 110 were graduate level courses. When analysed discipline wise, the breakup was Strategy (72 courses), Entrepreneurship (33), Innovation (12), Entrepreneurship & Innovation (7), Strategy & Innovation (3), Technology (2) and Strategy and Entrepreneurship (1)
- A total of 33 courses modules with a D score between 5 and 7 of these Graduate level courses are 30 and 6 fall in the UG category. The breakup is Entrepreneurship (15 Courses) Strategy (16 Courses) Innovation, Entrepreneurship & Innovation, Strategy & Innovation, Strategy & Entrepreneurship, and the Technology (1 each).

Average Digitization Score of Schools/Universities

The analysis of the average digitization score of each School or University indicates that that there are 12 Schools/Universities with average D Score between 5 and 8 which may be relatively on the higher side.

List of Universities/Schools with Average Digitization Score above 5				
Sl. No.	University/School Name	School Avg. D Score	No. of Courses	
1	Yale School of Management	7.76	1	
2	University of California at Irvine: Merage	7.10	2	
3	National University of Singapore Business School	6.13	7	
4	IIM Bangalore	5.97	9	
5	Nanyang Business School NTU Singapore	5.93	2	
6	Miami Herbert Business School	5.85	4	
7	London Business School	5.77	5	
8	Carnegie Mellon: Tepper	5.66	9	
9	University of Oxford: Saïd	5.58	1	
10	IIM Calcutta	5.31	1	
11	New York University: Stern	5.28	15	
12	Harvard Business School	5.03	9	

Table 4: List of Univ	ersities/Schools with	Averaae Diaitization	Score above 5

The Yale School of Management having just 1 course had the top average D Score of 7.76 and University of California at Irvine: Merage, offering 2 courses had the next highest average score of

7.10 followed by National University of Singapore Business School having a score of 6.13 offering 7 modules and IIM Bangalore with 9 courses scored at 5.97. Harvard Business School scored 5.03, offering 9 modules and New York University Stern having 15 courses in the discipline averaged at 5.28. It may be noted that the number of courses being offered by a school or university was not the key in impacting the digitization score but obviously the content was instrumental in determining the D Score as is evident from the above Table.

	List of Universities/Schools with Average Digitization Score below 3				
SI. No.	University/School Name	School Avg. D Score	No. of Courses		
1	Cornell University: Johnson	2.95	3		
2	IESE Business School	2.46	4		

Table 6: List of Universities/Schools with Average Digitization Score below 3

There are only 2 schools having a low average D score in the range of 2.46 and 2.95. IESE Business School Spain had an average of 2.46 on the 4 courses being presented.

There are 26 out of 38 (77.8%) Schools and Universities spread across US, Europe & Asia offering courses in the Strategy, Entrepreneurship & Innovation discipline, which were having an average digitization score in the range of 3 and 5 for the School or University. It may be seen from the table below that Washington University, University of Texas at Dallas- Jindal, University of Southern California-Marshall, University of Maryland: Smith, University of Delaware, Georgetown University: McDonough and Alliance Manchester Business School averaged at 3.28 while MIT: Sloan and University of Chicago: Booth, scored closer to 5.

List of Universities/Schools with Average Digitization Score between 3 and 5			
SI. No.	University/School Name	Avg. D Score	No. of Courses
1	Northwestern University: Kellogg	4.94	5
2	MIT: Sloan	4.91	2
3	University of Chicago: Booth	4.88	4
4	Emory University: Goizueta	4.77	3
5	The University of Hong Kong	4.67	3
6	Imperial College Business School	4.56	4
7	Indiana University: Kelley	4.56	1
8	Vanderbilt University: Owen	4.51	6
9	University of California at San Diego: Rady	4.49	4
10	Northeastern University: D'Amore McKim	4.48	3
11	University of Florida: Warrington	4.43	4
12	Stanford Graduate School of Business	4.41	6
13	INSEAD	4.34	2
14	Swansea University	4.28	1
15	Babson College	3.89	4
16	University of Pennsylvania: Wharton	3.79	5
17	University of Michigan: Ross	3.71	4

 Table 5: List of Universities/Schools with Average Digitization Score between 3 and 5

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18	City University of London: Cass	3.51	4
19	Warwick Business School	3.47	4
20	Columbia Business School	3.38	3
21	Alliance Manchester Business School	3.28	2
22	Georgetown University: McDonough	3.28	2
23	University of Delaware	3.28	1
24	University of Maryland: Smith	3.28	1
25	University of Southern California: Marshall	3.28	1
26	University of Texas at Dallas: Jindal	3.28	1
27	Washington University: Olin	3.28	1

Average D Score & Median D Score of Schools/Universities

The average D Score of the Schools and Universities in comparison to the Median D score for the Schools and Universities is analysed in the upcoming section.



Figure 1: Bar Diagram Showing the Avg. D Score & Median D Score of Schools/Universities

Average of D Score for each University Name. Color shows details about Tier.

The above bar diagram represents the average digitization score of the schools/Universities and the median average d score across all the 41 schools. It is noted that the median average digitization score is 4.487. There are 20 schools each (48.78 %) that fall above and below the median score and 1 school having D Score the same as the median score.

Sl. No.	University Name	Tier	Avg. D Score	No. of Courses Offered
1	Yale School of Management	Cohort 1	7.760	1
2	University of California at Irvine: Merage	Cohort 3	7.100	2
3	National University of Singapore Business School	Cohort 1	6.132	7
4	IIM Bangalore	Cohort 1	5.971	9
5	Nanyang Business School NTU Singapore	Cohort 2	5.932	2
6	Miami Herbert Business School	Cohort 3	5.852	4
7	London Business School	Cohort 1	5.771	5
8	Carnegie Mellon: Tepper	Cohort 2	5.663	9
9	University of Oxford: Saïd	Cohort 1	5.582	1
10	IIM Calcutta	Cohort 1	5.308	1
11	New York University: Stern	Cohort 1	5.283	15
12	Harvard Business School	Cohort 1	5.029	9
13	Northwestern University: Kellogg	Cohort 1	4.944	5
14	MIT: Sloan	Cohort 1	4.905	2
15	University of Chicago: Booth	Cohort 1	4.882	4
16	Emory University: Goizueta	Cohort 2	4.765	3
17	The University of Hong Kong	Cohort 3	4.668	3
18	Imperial College Business School	Cohort 2	4.557	4
19	Indiana University: Kelley	Cohort 2	4.556	1
20	Vanderbilt University: Owen	Cohort 2	4.505	6
21	University of California at San Diego: Rady	Cohort 3	4.487	4
22	Northeastern University: D'Amore McKim	Cohort 3	4.476	3
23	University of Florida: Warrington	Cohort 2	4.428	4
24	Stanford Graduate School of Business	Cohort 1	4.413	6
25	INSEAD	Cohort 1	4.338	2
26	Swansea University	Cohort 3	4.285	1
27	Babson College	Cohort 2	3.894	4
28	University of Pennsylvania: Wharton	Cohort 1	3.794	5
29	University of Michigan: Ross	Cohort 1	3.715	4
30	City University of London: Cass	Cohort 2	3.507	4
31	Warwick Business School	Cohort 3	3.465	4
32	Columbia Business School	Cohort 1	3.377	3
33	University of Delaware	Cohort 3	3.280	1
34	University of Maryland: Smith	Cohort 3	3.280	1
35	University of Texas at Dallas: Jindal	Cohort 3	3.280	1
36	Alliance Manchester Business School	Cohort 2	3.280	2
37	Georgetown University: McDonough	Cohort 2	3.280	2
38	University of Southern California: Marshall	Cohort 2	3.280	1
39	Washington University: Olin	Cohort 2	3.280	1
40	Cornell University: Johnson	Cohort 1	2.950	3
41	IESE Business School	Cohort 1	2.460	4

 Table 7: Avg. D Score of Schools/Universities & the Median D Score

The diagram and the table also show a cohort wise classification of the schools with Cohort 1 indicating that these belong to the top tier or having a ranking above 30 as per the Financial Times 2020 global MBA list. Cohort 2 is the list of schools falling in the category of above 30 to 60 and Cohort 3 the list of schools ranked above 60.

Average Digitization Score of Schools and the Number of Courses across Regions & Cohorts

The below tables and diagrams read together reveals the distribution of Schools and Universities along with the number of digitized courses offered and the average digitization scores in each region and cohort.

Asia has the highest average digitization score of 5.81 even though there are only 22 courses, followed by US with an average score of 4.69 despite the fact there are 104 courses and European schools averaged at 4.07 while offering 27 courses.

Table 8: Average Digitization Score of Schools and the Number of Courses across Regions

SI. No.	Region of School/University	Avg. D Score	No. of Courses
1	Asia	5.81	20
2	Europe	4.07	27
3	US	4.69	104
		Total	151

Sl. No.	Region of School/University	Cohort	Avg. D Score	No. of Courses
1		Cohort 3	4.67	3
	Asia	Cohort 2	5.93	2
		Cohort 1	6.00	15
2	Europe	Cohort 3	3.63	5
		Cohort 2	3.88	10
		Cohort 1	4.41	12
3	US	Cohort 3	4.93	16
		Cohort 2	4.62	31
		Cohort 1	4.66	57

Table 9: Average Digitization Score of Schools and the Number of Courses across Regions & Cohorts

Figure 2: Average Digitization Score of Schools and the Number of Courses across Regions & Cohorts



Figure 3: Sum of the Digitization Scores of all courses offered by Each University/School across each Cohort



School Bucket Graph Cohort

Sum of D Score for each University Name. Color shows details about Tier. The marks are labeled by sum of D Score. Details are shown for Tier.

Figure 4: Sum of the Digitization Scores of all courses offered by Each University/School across each Region





Sum of D Score for each University Name. Color shows details about Region. The marks are labeled by sum of D Score. Details are shown for Tier

As indicated in the figures above, when the cumulative digitisation scores for a university are calculated across multiple courses, New York University: Stern has highest sum of D score of 79.25 which is attributed to presence 15 digitized courses. In fact, in the study, New York University: Stern had the greatest number of courses (60 plus) for the discipline but only 15 of the modules had digitized content. Carnegie Mellon: Tepper, is a distant second with 24 courses in the discipline but only 9 with digitisation content. HBS had 30 course outlines in the public domain and only 9 contained digitisation terms. with a summated D Score of 45.26. The National University of Singapore Business School, Asia, offering 7 courses and had a D Score sum of 42.92. London Business School from UK with just 5 modules had a score of 28.86. We identified 20 courses from Vanderbilt University: Owen, but only 6 contained digitization and D Score sum for them was 27.03. Stanford Graduate School of Business with 26 modules had just 6 digitized courses with a summative score of 26.48. The lowest combined D score were for University of Texas at Dallas: Jindal, University of Maryland: Smith, University of Delaware, Washington University: Olin and University of Southern California: Marshall (each 3.28 and only 1 course).

Most of the Schools and Universities are showing a D Score sum of below 40 but for 5 schools. Only 10 schools/universities had a score of above 20 whereas 31 were below 20, obviously due to the level of digitisation terms in the course offerings, despite many being courses listed in the Strategy, Entrepreneurship & Innovation streams.

Sl. No.	University Name	Region	Tier	No. of Courses	D Score Sum
1	New York University: Stern	US	Cohort 1	15	79.25
2	IIM Bangalore	Asia	Cohort 1	9	53.74
3	Carnegie Mellon: Tepper	US	Cohort 2	9	50.96
4	Harvard Business School	US	Cohort 1	9	45.26
5	National University of Singapore Business School	Asia	Cohort 1	7	42.92
6	London Business School	Europe	Cohort 1	5	28.86
7	Vanderbilt University: Owen	US	Cohort 2	6	27.03
8	Stanford Graduate School of Business	US	Cohort 1	6	26.48
9	Northwestern University: Kellogg	US	Cohort 1	5	24.72
10	Miami Herbert Business School	US	Cohort 3	4	23.41
11	University of Chicago: Booth	US	Cohort 1	4	19.53
12	University of Pennsylvania: Wharton	US	Cohort 1	5	18.97
13	Imperial College Business School	Europe	Cohort 2	4	18.23
14	University of California at San Diego: Rady	US	Cohort 3	4	17.95
15	University of Florida: Warrington	US	Cohort 2	4	17.71
16	Babson College	US	Cohort 2	4	15.58
17	University of Michigan: Ross	US	Cohort 1	4	14.86
18	Emory University: Goizueta	US	Cohort 2	3	14.3
19	University of California at Irvine: Merage	US	Cohort 3	2	14.2
20	City University of London: Cass	Europe	Cohort 2	4	14.03
21	The University of Hong Kong	Asia	Cohort 3	3	14.01
22	Warwick Business School	Europe	Cohort 3	4	13.86
23	Northeastern University: D'Amore McKim	US	Cohort 3	3	13.43
24	Nanyang Business School NTU Singapore	Asia	Cohort 2	2	11.86
25	Columbia Business School	US	Cohort 1	3	10.13
26	IESE Business School	Europe	Cohort 1	4	9.84
27	MIT: Sloan	US	Cohort 1	2	9.81
28	Cornell University: Johnson	US	Cohort 1	3	8.85
29	INSEAD	Europe	Cohort 1	2	8.68
30	Yale School of Management	US	Cohort 1	1	7.76
31	Georgetown University: McDonough	US	Cohort 2	2	6.56
32	Alliance Manchester Business School	Europe	Cohort 2	2	6.56
33	University of Oxford: Saïd	Europe	Cohort 1	1	5.58
34	IIM Calcutta	Asia	Cohort 1	1	5.31
35	Indiana University: Kelley	US	Cohort 2	1	4.56
36	Swansea University	Europe	Cohort 3	1	4.28
37	University of Texas at Dallas: Jindal	US	Cohort 3	1	3.28
38	University of Maryland: Smith	US	Cohort 3	1	3.28
39	University of Delaware	US	Cohort 3	1	3.28
40	Washington University: Olin	US	Cohort 2	1	3.28
41	University of Southern California: Marshall	US	Cohort 2	1	3.28

Table 10: Sum of the Digitization Scores of all courses offered by Each School across each Region & Cohort

Average D Scores of Core/Elective courses offered by Schools across each Country & Region

Table 11 and Figure 5 presents a visual map- Country-wise D Scores of Core/Elective courses offered by the Schools across each Region. The US courses had a wide variety as core, electives, minor, major, interdisciplinary, and executive education. There are 81 electives and 14 core courses from USA. UK has 12 as core and 9 electives. Indian schools had 5 electives and 3 core courses. While Singapore had just 6 electives and 3 core courses, but its core offering had the highest D Score of 6.95. The lowest average D score of 2.46 (4 courses) was from Spain across the different countries.

SI. No.	Country	Elective/ Core	Avg. D Score	No. of Courses
1	US	Elective	4.66	81
2	US	Core	4.79	14
3	UK	Core	4.53	12
4	UK	Elective	4.11	9
5	India	Elective	6.23	7
6	Singapore	Elective	5.66	6
7	US	Minor	4.90	5
8	Spain	Core	2.46	4
9	India	Core	5.16	3
10	Hong Kong	Elective	4.67	3
11	Singapore	Core	6.95	3
12	France	Elective	4.34	2
13	US	Major	5.10	2
14	US	Executive Education	3.28	1
15	US	Interdisciplinary Elective	5.61	1

Table 11: Country Wise Average D Scores of Core/Elective courses offered by Schools across each Region

Figure 5: Country Wise Scores of Core/Elective courses offered by Schools across each Region



Country Wise -Core, Electives & Avg D Score

Map based on Longitude (generated) and Latitude (generated). Color shows details about Elective/ Core. The marks are labeled by average of D Score. Details are shown for Country. The view is filtered on Country, which keeps 7 of 7 members.

Broad Areas of Courses, Region Wise with Avg. D Score & No. of Courses

The course titles of all the Schools and Universities were grouped into broad areas and the following groupings emerged.

SI. No.	Broad Areas of Courses
1	Entrepreneurship
2	Entrepreneurship & Innovation
3	Innovation
4	Strategy
5	Strategy & Innovation
6	Technology

The logic used for the grouping of the courses were (i) The content and approach as described in the course curriculum (ii) The stream under which the course falls as per the information available in the School or University website. In cases where there was any ambiguity the research team used their discretion in categorising the courses.

SI. No	Region	Broad Area of Courses	Avg. D Score	No of Courses
	Asia	Strategy	5.29	13
		Entrepreneurship & Innovation	6.26	4
1		Technology	8.47	3
		Entrepreneurship	5.37	1
		Innovation	3.28	1
		Strategy	4.35	16
		Entrepreneurship	2.67	4
n	Europe	Strategy & Innovation	5.07	2
2		Innovation	3.74	2
		Entrepreneurship & Innovation	3.28	2
		Strategy and Entrepreneurship	5.49	1
		Strategy	4.73	54
		Entrepreneurship	4.79	35
3		Innovation	3.93	9
	03	Entrepreneurship & Innovation	4.65	3
		Technology	5.26	2
		Strategy & Innovation	4.80	1

 Table 12: Broad Areas of Courses, Region Wise with Avg. D Score & No. of Courses

Figure 6: Broad Areas of Courses, Region Wise with Avg. D Score & No. of Courses

Broad Course Areas - Avg.D Score & No. of Courses



The above diagrammatic representation highlights that Schools from Asia was presenting 13 modules in Strategy area, 3 in technology and 4 in Entrepreneurship and Innovation. The average digitization score was the highest for Technology area (8.47) while the average D Score in Entrepreneurship area and Strategy area hovered slightly above 5, even though there was only a single course in Entrepreneurship.

In the case of European Schools there were 16 Strategy modules averaging a score of 4.35 while in Entrepreneurship the average D score being 2.67. There were only 2 modules in Strategy & Innovation, yet the average D score was 5.07.

Schools and Universities from USA were having courses coming under six broad areas, 54 in Strategy (average D Score 4.73), 35 in Entrepreneurship with average score of 4.79, 9 modules in Innovation with average d Score of about 4 and just two Technology modules scoring the highest at 5.26.



Figure 7: Waterfall Diagram showing D Scores of Individual Courses

Average of D Score for each Course Name.

The waterfall diagram is a symbolic visualization of the average D scores of individual courses from the highest to the lowest for the 151 digitized courses. It shows a gradual decline in digitization in a smooth manner up to course 149 i.e., but for the last 4 courses. The smooth downward gradation may be interpreted as depicting the consistency in the data and the better quality of the data.

Annexure No: 1

Region	University Name	Tier	Course Name	Avg. D
	National University of Singapore	Cohort 1	Technological Innovation	9.37
	Business School			
	National University of Singapore Business School	Cohort 1	Big Data & Business Strategy	9.28
	IIM Bangalore	Cohort 1	Artificial Intelligence Applications for Managers	9.00
	National University of Singapore Business School	Cohort 1	Digital Strategy	8.44
	IIM Bangalore	Cohort 1	Big Data Analytics	8.38
	IIM Bangalore	Cohort 1	Managing Digital Transformations	8.04
	The University of Hong Kong	Cohort 3	Online Business Strategy	6.81
	Nanyang Business School NTU	Cohort 2	Strategic Technology and Innovation	6.50
	Singapore		Management	
	IIM Bangalore	Cohort 1	Digital Marketing	5.76
	IIM Bangalore	Cohort 1	Competition Strategy PGP	5.55
Asia	Nanyang Business School NTU Singapore	Cohort 2	Entrepreneurship	5.37
	IIM Calcutta	Cohort 1	STRATEGIC MANAGEMENT	5.31
	IIM Bangalore	Cohort 1	Competition Strategy EPGP	4.61
	IIM Bangalore	Cohort 1	Strategic Management of Technology and Innovation	4.57
	IIM Bangalore	Cohort 1	Platform Business Models	4.56
	National University of Singapore Business School	Cohort 1	Strategic Management	4.30
	The University of Hong Kong	Cohort 3	Artificial Intelligence for Business Leaders	3.91
	National University of Singapore Business School	Cohort 1	Entrepreneurial Strategy	3.61
	National University of Singapore Business School	Cohort 1	Entrepreneurial Marketing	3.61
	IIM Bangalore	Cohort 1	Strategic Management in Media and Entertainment Industry	3.28
	The University of Hong Kong	Cohort 3	Creativity and Business Innovation	3.28

Region	University Name	Tier	Course Name	Avg. D Score
	London Business School	Cohort 1	Digital Strategy	8.25
	Imperial College Business School	Cohort 2	Digital Economy & Digital Strategy	5.90
	London Business School	Cohort 1	Strategic Management	5.74
	University of Oxford: Saïd	Cohort 1	Strategy & Innovation	5.58
Europe	London Business School	Cohort 1	Managing a Digital Organization	5.49
	London Business School	Cohort 1	Innovation & Technology Strategy	5.11
	Imperial College Business School	Cohort 2	Management Strategy and Innovation in Fintech	4.55
	INSEAD	Cohort 1	Technology & Innovation Strategy	4.54
	Imperial College Business School	Cohort 2	Strategic Marketing	4.49

Swansea University	Cohort 3	Social Media Marketing	4.28
London Business School	Cohort 1	Strategic Economic Analysis	4.26
City University of London: Cass	Cohort 2	Capturing Value from Technological Innovation	4.19
INSEAD	Cohort 1	Digital Entrepreneurship	4.14
Warwick Business School	Cohort 3	Operations Strategy	4.02
Alliance Manchester Business School	Cohort 2	Strategy and Competition	3.28
Alliance Manchester Business School	Cohort 2	High Tech Entrepreneurship	3.28
City University of London: Cass	Cohort 2	Innovation practice	3.28
City University of London: Cass	Cohort 2	Innovation & Entrepreneurship	3.28
City University of London: Cass	Cohort 2	Advanced Strategy and Business Models	3.28
IESE Business School	Cohort 1	Strategy in the Energy Sector	3.28
IESE Business School	Cohort 1	Future Emerging Technologies	3.28
IESE Business School	Cohort 1	Innovation Strategy	3.28
Imperial College Business School	Cohort 2	Business Models and Intellectual Property	3.28
Warwick Business School	Cohort 3	Strategy Analysis and Practice	3.28
Warwick Business School	Cohort 3	Strategic Advantage	3.28
Warwick Business School	Cohort 3	Digital Business Strategy	3.28
IESE Business School	Cohort 1	Banking: Present and Future	0.00

Region	University Name	Tier	Course Name	Avg. D Score
US	New York University: Stern	Cohort 1	Strategy in Technology Intensive Industries	10.00
US	Harvard Business School	Cohort 1	Strategy and Technology	9.07
US	Carnegie Mellon: Tepper	Cohort 2	Technology Strategy	8.25
US	Stanford Graduate School of Business	Cohort 1	Media Entrepreneurship	7.94
US	New York University: Stern	Cohort 1	Entrepreneurship & New Economy	7.85
US	University of California at Irvine: Merage	Cohort 3	Strategy in a Digital Age	7.82
US	Yale School of Management	Cohort 1	Designing & Leading Organizations	7.76
US	Northwestern University: Kellogg	Cohort 1	Business Strategy	7.59
US	Harvard Business School	Cohort 1	Public Entrepreneurship	7.40
US	University of California at San Diego: Rady	Cohort 3	Real Estate and the Tech Sector	7.25
US	Miami Herbert Business School	Cohort 3	Digital Marketing	7.25
US	Carnegie Mellon: Tepper	Cohort 2	Digital Marketing and Social Media Strategy	7.14
US	Miami Herbert Business School	Cohort 3	Mobile Apps Development	6.93
US	MIT: Sloan	Cohort 1	Foundations of Information Policy	6.53
US	Columbia Business School	Cohort 1	Innovation Saloon	6.41
US	Emory University: Goizueta	Cohort 2	Digital & Social Media Strategy	6.41
US	University of California at Irvine: Merage	Cohort 3	Corporate Strategy	6.38
US	New York University: Stern	Cohort 1	Disruption Entrepreneurship & Social Impact	6.35
US	New York University: Stern	Cohort 1	Digitalization and Society: The Fourth Industrial Revolution	6.29
US	New York University: Stern	Cohort 1	Emerging Technologies	6.21
US	Carnegie Mellon: Tepper	Cohort 2	Introduction to Computing for Creative Practice	6.17

US	Carnegie Mellon: Tepper	Cohort 2	Special Topic: Rapid Prototyping Technologies	6.17
US	Vanderbilt University: Owen	Cohort 2	Digital Marketing Strategy	6.16
US	University of Chicago: Booth	Cohort 1	Competitive Strategy	6.11
US	Miami Herbert Business School	Cohort 3	Digital Media Metrics	5.95
US	New York University: Stern	Cohort 1	Foundations of Technology Entrepreneurship	5.94
US	New York University: Stern	Cohort 1	Commercialization of Frontier Technologies	5.84
US	Carnegie Mellon: Tepper	Cohort 2	Developing Blockchain Use Cases	5.72
US	Harvard Business School	Cohort 1	Tough Tech Ventures	5.66
US	Carnegie Mellon: Tepper	Cohort 2	Business Technology for Consulting	5.62
US	Northeastern University: D'Amore McKim	Cohort 3	FOUNDATIONS OF ARTIFICIAL INTELLIGENCE	5.61
US	Cornell University: Johnson	Cohort 1	AI Strategy and Applications	5.57
US	Babson College	Cohort 2	NEW TECHNOLOGY VENTURES	5.30
US	University of Chicago: Booth	Cohort 1	SOCIAL ENTREPRENEURSHIP AND INNOVATION	5.19
US	University of Florida: Warrington	Cohort 2	BUSINESS TELECOMMUNICATIONS STRATEGY & APPLICATIONS II	5.16
US	Babson College	Cohort 2	SF2 CONSULTING IN TECH ENTREPRENEURSHIP	5.07
US	University of Michigan: Ross	Cohort 1	Information Technology Strategy in Supply Chain and Logistics	5.02
US	Harvard Business School	Cohort 1	Grand Challenges for Entrepreneurs	4.97
US	Vanderbilt University: Owen	Cohort 2	Global Innovation Strategy	4.80
US	Vanderbilt University: Owen	Cohort 2	Business Analytics	4.79
US	Northwestern University: Kellogg	Cohort 1	Technology and Innovation Strategy	4.64
US	University of Florida: Warrington	Cohort 2	Business Telecom Strategy and Applications – I	4.63
US	New York University: Stern	Cohort 1	Strategic Management of Ai	4.63
US	University of Pennsylvania: Wharton	Cohort 1	INTEL PROPERTY STRATEGY	4.62
US	University of Chicago: Booth	Cohort 1	TECHNOLOGY STRATEGY	4.61
US	Carnegie Mellon: Tepper	Cohort 2	The Strategy and Management of Technological Innovation	4.61
US	Emory University: Goizueta	Cohort 2	Marketing Strategy & CRM	4.61
US	Stanford Graduate School of Business	Cohort 1	Strategic Marketing Communication	4.61
US	Indiana University: Kelley	Cohort 2	Strategic Management of Technology and Innovation	4.56
US	Northeastern University: D'Amore McKim	Cohort 3	PLATFORM INNOVATION	4.53
US	Babson College	Cohort 2	SF2 SILICON TECHNOLOGY VENTURES	4.51
US	University of Pennsylvania: Wharton	Cohort 1	TECHNOLOGY STRATEGY	4.51
US	Harvard Business School	Cohort 1	ECommerce: Strategy Growth and Analytics	4.51
US	New York University: Stern	Cohort 1	The Business of Platforms Networks and Two- Sided Markets	4.50
US	Northwestern University: Kellogg	Cohort 1	FinTech Strategy	4.40
US	Northwestern University: Kellogg	Cohort 1	People Analytics and Strategy	4.38
US	Vanderbilt University: Owen	Cohort 2	Innovation Realization	4.14
US	New York University: Stern	Cohort 1	Tech and the City: Customer Centric Digital Entrepreneurship	4.14
US	University of California at San Diego: Rady	Cohort 3	Business Innovation and Growth	4.14
US	Stanford Graduate School of Business	Cohort 1	Strategic Management of Technology and Innovation	4.10
US	New York University: Stern	Cohort 1	Digital Strategy	4.07
US	Carnegie Mellon: Tepper	Cohort 2	Designing for the Internet of Things	3.99
US	Vanderbilt University: Owen	Cohort 2	Innovation Strategy	3.87

US	Harvard Business School	Cohort 1	Strategy for Entrepreneurs Intensive: Critical	3.82
US	Northwestern University: Kellogg	Cohort 1	Analytics for Strategy	3.72
US	University of Chicago: Booth	Cohort 1	Strategic Leadership in Management Networks	3.61
US	New York University: Stern	Cohort 1	Technology Innovation Strategy	3.60
US	Carnegie Mellon: Tepper	Cohort 2	Pricing Strategy	3.28
US	Columbia Business School	Cohort 1	Family Business Management	3.28
US	Cornell University: Johnson	Cohort 1	Entrepreneurship for Scientists and Engineers	3.28
US	Emory University: Goizueta	Cohort 2	Multinational Firms & Strategy	3.28
US	Georgetown University: McDonough	Cohort 2	Strategic Business Analytics	3.28
US	Georgetown University: McDonough	Cohort 2	Technology Strategy	3.28
US	Harvard Business School	Cohort 1	Entrepreneurial Sales	3.28
US	Harvard Business School	Cohort 1	Entrepreneurial Failure	3.28
US	Harvard Business School	Cohort 1	Corporate Strategy: Creating Value Across Markets	3.28
US	MIT: Sloan	Cohort 1	Entrepreneurial Finance and Venture Capital	3.28
US	Miami Herbert Business School	Cohort 3	Launching High Technology Ventures.	3.28
US	New York University: Stern	Cohort 1	Tech Industry Drivers	3.28
US	New York University: Stern	Cohort 1	Innovation & Design	3.28
US	New York University: Stern	Cohort 1	Design Thinking for Managers	3.28
US	Northeastern University: D'Amore McKim	Cohort 3	BUSINESS MODEL DESIGN & INNOVATION	3.28
US	Stanford Graduate School of Business	Cohort 1	Strategic Leadership	3.28
US	Stanford Graduate School of Business	Cohort 1	Innovation in Healthcare Venture Capital Investing	3.28
US	Stanford Graduate School of Business	Cohort 1	Strategies of Effective Product Management	3.28
US	University of California at San Diego: Rady	Cohort 3	Topics in Entrepreneurship: Frontiers in Real Estate	3.28
US	University of California at San Diego: Rady	Cohort 3	Innovation and Technology Strategy	3.28
US	University of Delaware	Cohort 3	Entrepreneurship (B.S)	3.28
US	University of Florida: Warrington	Cohort 2	INTRODUCTION TO SOCIAL ENTREPRENEURSHIP	3.28
US	University of Maryland: Smith	Cohort 3	Strategic and Transformational IT	3.28
US	University of Michigan: Ross	Cohort 1	Strategies for Sustainable Development II:	3.28
US	University of Michigan: Ross	Cohort 1	Strategies for Sustainable Development I:	3.28
116		Calcula	Competitive Environmental Strategy	2.20
	University of Michigan: Ross	Conort 1		3.28
	University of Pennsylvania: Wharton	Conort 1		3.28
03	University of Pennsylvania: Wharton	Cohort 1		3.28
03	University of Pennsylvania: Wharton	Cohort 2	ADV GLOBAL STRATEGY	3.28
03	Marshall	Conort 2	Strategies in high rech businesses	3.28
US	University of Texas at Dallas: Jindal	Cohort 3	The Entrepreneurial Experience	3.28
US	Vanderbilt University: Owen	Cohort 2	Social Enterprise and Entrepreneurship	3.28
US	Washington University: Olin	Cohort 2	Strategic Cost Analysis	3.28
US	Babson College	Cohort 2	CROWDFUNDING	0.70
US	Columbia Business School	Cohort 1	Entrepreneurial Law for Start Ups Planning for Success	0.44
US	Cornell University: Johnson	Cohort 1	Applied Operations Strategy	0.00