ONLINE RESIDENTIAL COURSE
DIGITAL TRANSFORMATION IN BUSINESS

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Course Description

This course will provide a high-level overview of the wide-ranging and deep transformations occurring in the practice of business, on account of exponential changes in digital technologies. Topics include new business models, how analytics and data are transforming enterprise decision making and processes, the future of work and workplace, how to become a modern digital enterprise and what challenges and threats that brings, and future directions for the underlying digital technologies including the world wide web and digital platforms.

Course Overview

There will be a focus on technology-driven transformations in the areas of healthcare, digital platforms, entertainment, food and agriculture, and animal science.

1. **Technological Progress:** A landscape of exponential progress in IT. Moore's Law and its relatives. Exponential innovation.

2. **Complementary innovations and transformation:** The need to transform other aspects of the organization, products, market, etc., in order to benefit from IT progress.

3. **Analytics Showcase** (Transformation in decision making and process operations): Landscape of techniques, new approaches to business problems, and limitations.

4. **Transformation in business models:** From hardware to services; multi-sided marketplace business models.

5. **Transformation in Work and the Workplace:** The future of work, and how IT and analytics is transforming work and the workplace.

6. **Leading digital transformation:** Creating a culture of data-driven operations and decision

making.

7. **The technology backbone:** Data centers, cloud computing, big data management, APIs.

8. **Challenges and threats:** Data security (breaches, ransomware), Shadowy data brokers (e.g., Acxiom, Cambridge Analytica); Data privacy; data sharing; biases (data, bots, algorithmic learning).

9. **Doing digital transformation:** How to become a digital firm? What does it mean? How do you analyze the ROI of different digital strategies?

10. **The ills and the future of web platforms:** Technology regulation: power, abuse, and competition; disconnect between platform and societal objectives. Platform solid (https://solid.mit.edu), PSD2, Web 3.0, mandated open and secure APIs. decentralizing platforms.

Course Materials
- 12 Readings available online (Refer Course Schedule)

Course Requirements

This course is graded on a Pass/Fail basis.

To pass the course, students must complete the following:

1) Complete a **pre-work Quiz** (see details in *Course Schedule* below) prior to the in-person, residential course. The quiz is based on its associated, pre-class readings/cases. The quiz opens on Feb 28, 2022 and will close on March 15, 2022.

The quiz is-

- Open book (Refer readings)
- Untimed
- Single Attempt
- Every MCQ is worth 1 point

2) Student groups must complete a **group presentation, answering all required questions and turning in their presentations on time, to receive a passing grade. The presentations must be completed no later than March 19, 2022.**

Notes About Expectations for Class Behavior

1. It is expected that all class members will treat each other with respect and dignity.
2. It is not acceptable behavior to insult, harass, or demean any member of the class.
3. Professional business behavior should be modeled in the classroom, including use of appropriate language, jokes, or stories.

In general, students should adhere to the UC Davis Principles of Community, copied below.

The University of California, Davis, is first and foremost an institution of learning and teaching, committed to serving the needs of society. Our campus community reflects and is a part of a society comprising all races, creeds and social circumstances. The successful conduct of the university's affairs requires that every member of the university community acknowledge and practice the following basic principles:

We affirm the inherent dignity in all of us, and we strive to maintain a climate of justice marked by respect for each other. We acknowledge that our society carries within it historical and deep-rooted misunderstandings and biases, and therefore we will endeavor to foster mutual understanding among the many parts of our whole.

We affirm the right of freedom of expression within our community and affirm our commitment to the highest standards of civility and decency towards all. We recognize the right of every individual to think and speak as dictated by personal belief, to express any idea, and to disagree with or counter another's point of view, limited only by university regulations governing time, place and manner. We promote open expression of our individuality and our diversity within the bounds of courtesy, sensitivity and respect.

We confront and reject all manifestations of discrimination, including those based on race, ethnicity, gender, age, disability, sexual orientation, religious or political beliefs, status within or outside the university, or any of the other differences among people which have been excuses for misunderstanding, dissension or hatred. We recognize and cherish the richness contributed to our lives by our diversity. We take pride in our various achievements, and we celebrate our differences.

We recognize that each of us has an obligation to the community of which we have chosen to be a part. We will strive to build a true community of spirit and purpose based on mutual respect and caring.

Course Schedule

Pre-Residential Readings

1. [The Essential Components of Digital Transformation](#)
2. [The Transforming Power of Complementary Assets](#)
3. [Digital Capital & Superstar Firms](#)
4. [The Future of Work in the Age of AI: Displacement or Risk-Shifting?](#)
5. [Digital Transformation - Payoff is High, but why is it so hard to achieve?](#) 6.
[Top 6 reasons why digital transformations fail](#)
7. [Why Digital Transformation is now on the CEO's shoulders](#)
8. [Digital Transformation Changes How Companies Create Value](#)
9. [Did you experience the platform economy today?](#)
10. [Pipelines, platforms and the new rules of strategy](#)
11. [Platforms, communities, and business ecosystems: Lessons learned about technology entrepreneurship in an interconnected world](#)
12. [How Tesla's Charging Stations Left Other Manufacturers in the Dust](#)

(Refer Note below on how to access the readings.)

Pre-Residential Team Assignment

Team Formation:
Groups of 5 students each will be formed using the random group assignment feature on 2U.

Assignment:
Based on your collective experience and background, identify -

● One vital opportunity for gainfully employing new information technology
innovations in your company or industry
● The costs of deploying this new technology or innovation, including both fixed costs and
variable costs
● Who will directly incur these costs and who will pay these costs
● How certain are these costs, and the timeframe in which they will be incurred

● The benefit from it: who will benefit, what are the gains, how certain are the gains, and
when will they be realized
● What other transformations or changes should occur at the departmental, firm, or market
level in order to realize the maximum gains from these innovations

Example:
A University might employ sophisticated two-directional video technologies (cameras,
drop-down mics, large monitors) to enable "hybrid learning" (some students in class, others
remote on video). The University would incur the costs; these are relatively well-defined
however it is common for a 200% cost overrun for these types of projects (once you factor

in installation, maintenance, etc.); benefits will accrue to students (for instance, someone who's traveling or sick could still attend class; available recordings would allow them to review the session), broader gains or costs could be how this alters applications and admissions and in-person participation; other transformations could include that the University alters its perception of "home market" - or it designs new "international" programs with different rotating locations while allowing remote participation by a few students, changes in fee structure etc.
(Your answer should be deeper and more comprehensive than this example response.)

Submission:
Please submit your work in two formats:
 1) As a **written document** (could be a series of bullet-points for each question above, or prose) **AND**
2) As a **video** featuring the team members (be creative; make it a song or a skit or some form that is both informative and engaging).

Submission Date: March 19, 2022

Residential Course
The 2-Day in-person Residential program will be conducted on 03/25/2022 and 03/26/2022 in San Jose, CA. The guest speaker schedule will be shared soon.

Note: Accessing the Readings
Linked items are available online or through the UC Davis library. If noted, some links will need to be accessed from on campus or by using the library VPN. Some items will need to be searched for directly. The link will take you to the main HBR page of the library. Click on "Search within this publication" and then search for "AN [Insert number]" in the second field.

1. The Essential Components of Digital Transformation **[Needs VPN]**
   https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=153915846&site=ehost-live
2. The Transforming Power of Complementary Assets
   https://sloanreview.mit.edu/article/the-transforming-power-of-complementary-assets/
3. Digital Capital & Superstar Firms
   https://www.nber.org/system/files/working_papers/w28285/w28285.pdf
4. The Future of Work in the Age of AI: Displacement or Risk-Shifting?
   https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3647367
5. Digital Transformation - Payoff is High, but why is it so hard to achieve?
   https://bluemoondigital.co/our-blog/digital-transformation-payoff-is-high-but-why-is-it-so-hard-to-achieve/

6. Top 6 reasons why digital transformations fail
   https://searchcio.techtarget.com/tip/Top-6-reasons-why-digital-transformation-failures-happen
7. Why Digital Transformation is now on the CEO's shoulders
   https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/why-digital-transformation-is-now-on-the-ceos-shoulders
8. Digital Transformation Changes How Companies Create Value **[Needs VPN]**
   https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=154330694&site=ehost-live
9. Did you experience the platform economy today?
   https://gsm.ucdavis.edu/blog/did-you-experience-platform-economy-today
10. Pipelines, platforms and the new rules of strategy **[Needs VPN]**
    https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=113934414&site=ehost-live
11. Platforms, communities, and business ecosystems: Lessons learned about technology entrepreneurship in an interconnected world
    https://ir.library.carleton.ca/pub/12188
12. How Tesla's Charging Stations Left Other Manufacturers in the Dust **[Needs VPN]**
    https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=148431331&site=ehost-live