



tu-e4040 opportunity prototyping

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3 ectS

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overview

This course used to be called New Venture Development and tossed the “entrepreneurship” word around a lot. For students, the natural reflex was to think “startup” – find an idea, write up a plan, raise resources and secure customers. Entrepreneurship is a process of recognizing and acting upon opportunities. **Startups are but one mode of activation, but by no means the only one.**

My thinking has been guided by Harvard Professor Howard Stevenson who defined entrepreneurship as “opportunity pursuit in the face of resource constraints”. Notice no explicit mention of startups. “Entrepreneurial” individuals chart the pathway that bridges the inevitable gap that exists between “opportunity” “resources” and “customer buy in”. Calling this course Opportunity Prototyping is a deliberate choice on my part.

OPPORTUNITY is perceived. Opportunity has an ephemeral quality as we often speak of “opportunity windows”. Opportunity exists because our senses alert us that something is missing or amiss. And importantly, opportunities are **framed in the future**. Think about it. If you wanted to introduce a new foodstuff into the market, the time-to-market could be a year. Put another way, the “new” product on the shelf today is at least one year old!

PROTOTYPING is a sensible risk management strategy both in terms of figuring out what to do and as a basis for creating buy in from resource providers and customers alike. Novelty implies that something has not been done before or in the way proposed. The inherent challenge with novelty is that human beings by their very nature are neophobic – we tend to shy away from new things when confronted with them.

course objectives

The goals of the course:

- To appreciate the value of exploring visions of the future as a basis for guiding entrepreneurial action
- To understand the importance of the critical X factor (you) by assuming personal agency in the exploration process
- To instill confidence to take action

The learning objectives of the course:

- To develop your design and entrepreneurial acumen guided by the **Vision in Product (VIP)** framework and **Effectuation Theory**
- To hone your sensemaking ability through **observation, rigorous research, and discussion**
- To identify **relevant** and **meaningful** starting points to guide new product development efforts

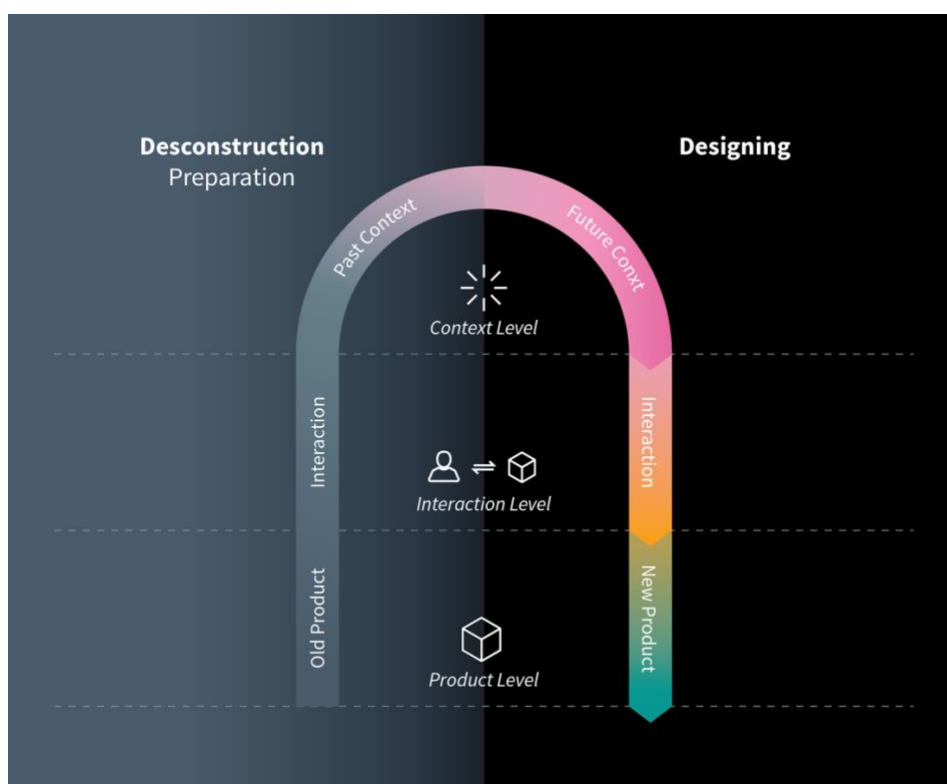
We are working from the premise that exploring future possibilities is more important than solving present problems. Opportunity is “placed” in a future context that is constructed on the back of research insights, personal perspective and conscious choice.

our lenses

We will rely on the **Vision in Product (VIP)** design framework developed at Delft University by Paul Hekkert and Matthijs van Dijk for guidance. Their work is part of a broader movement called speculative design. Phil Balagtas, Experience Design Partner at McKinsey considers speculative design as: “...a way to manifest possibilities, to prepare us for inconvenient challenges and facilitate a more desirable, responsible path in the future.”

The VIP process is displayed below and moving from lower left to bottom right.

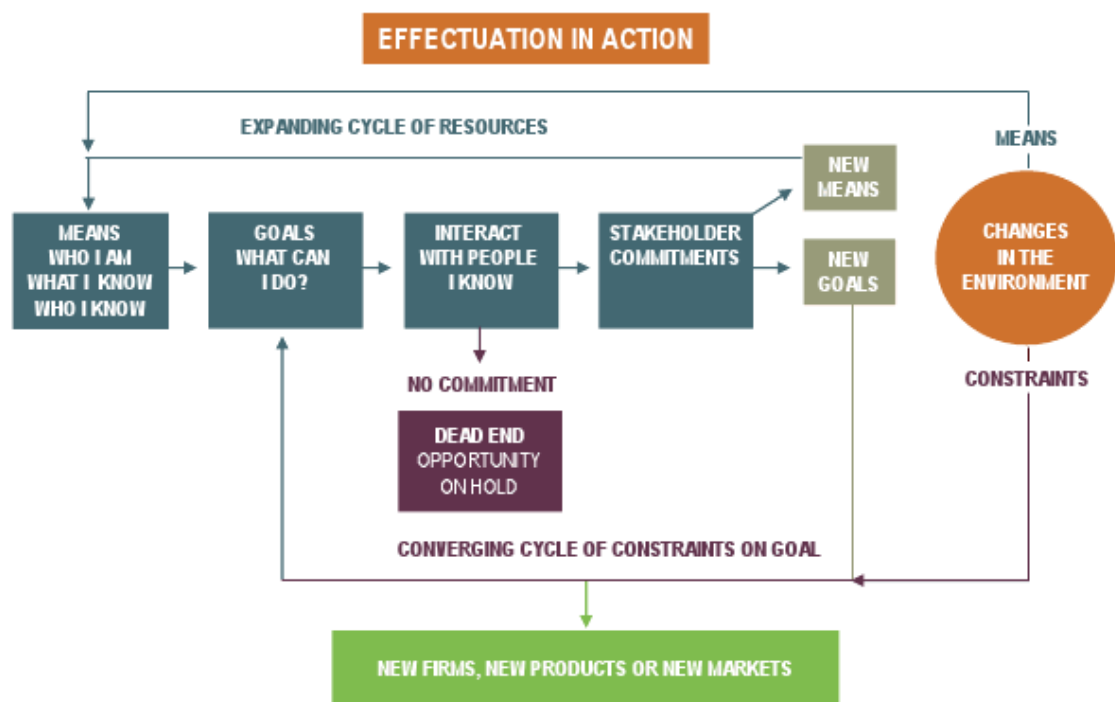
Note that designing new products is the LAST not the FIRST stage of the process!



The **VIP approach** strongly resonates with **Effectuation Theory**. Saras Sarasvathy identified a set of decision-making principles that **expert entrepreneurs** (been there, done that, got several t-shirts) use in situations of high uncertainty. She found that expert entrepreneurs:

- 1) Initiate action based on means available to them and not pre-set goals
- 2) Set limits for their investment both in terms of time and money up front
- 3) Explore and develop opportunities co-creating with outside parties
- 4) Welcome unexpected surprises as potential new insights to be considered
- 5) Believe the future can be shaped by their actions (a strong sense of personal agency)

Her theory is summarized below and her seminal work "What Makes Entrepreneurs Entrepreneurial" has been uploaded on MyCourses.



Sara's research was framed as a novelty challenge "what would you create from a common set of background information?". In the VIP perspective, my sense is that respondents jumped quickly from the preparation to the design phase with a short-term horizon in mind. Framing possibilities (VIP) is essential groundwork for deciding what to do (effectuation). We spend too little time on the "why" as opposed to the "what". **It is my firm belief that the quality of the effectuation output will be immeasurably better placed on the back of VIP infused input!**

deliverables & evaluation

Course deliverables involves both **individual (50%) and group (50%) tasks**.

The individual tasks are designed to hone your powers to observe and interpret the world around you:

1. For the What Am I Seeing exercise, you will closely examine and deconstruct a product of your choosing.

2. For the **What Are Others Experiencing** exercise, you will closely examine and deconstruct the interaction between users and products.
3. For the **What's My Take** exercise, using the future context you developed as a group as a springboard, what would you like to offer people living in that world?
4. **Learning Diary** – the VIP process is both exhilarating and challenging for student and teacher alike! As you embark on this journey, I want you to provide a personal perspective on your experience. What were the key takeaways for you? What did you learn through the process? What worked well? Not so well? What would you have done differently? In my experience, keeping brief notes as you go through the process stimulates and enhances the reflection process. There is no page limit per se but you get out of it what you put into it!

AI Vision 2030 (Group Task 50%)

The **group task** will be discussed at length in the introductory session. It will provide you with an opportunity to engage with the VIP approach in a domain of your choosing. The world around you is designed with a vision in mind, but when you examine carefully (deconstruction in VIP terminology), many design flaws appear.

Opportunities imply elements of **novelty** (new to the world) and a **future orientation** (jobs to be done). We are navigating a period of unprecedented opportunity and disruption accelerated by the rapid development of **Artificial Intelligence**. (Incidentally one of my vacation reads this year will be **The Power Law: Venture Capital and the Art of Disruption** by Sebastian Mallaby).

The AI Piece

Full disclosure, I am not an AI expert! Back to basics. **Intelligence** can be defined as the ability to solve complex problems or make decisions with outcomes benefiting the actor. **Artificial** implies that rather than human actors relying on their brains, problems are solved and decisions are made by machines relying on data. AI is a disruptive (to incumbents) and transformative (to entrepreneurs) force that unlocks unprecedented opportunities and, if you have been following the press, societal and other concerns. The magnitude of this opportunity is large and pervasive with many commentators speaking in terms of an "industrial revolution".

In hindsight, this should not be at all surprising:

- The installed base of increasingly powerful devices to capture data has continually increased
- The cost of sharing that data has continually decreased
- The capability to store mountains of data in volume at increasingly competitive prices
- Accessible interfaces to harness this data are constantly being developed, fueled by
- A societal and behavioral shift from "paper" to "digital"

In practical terms, I had an insightful discussion with a colleague who is an AI expert developing an instantaneous fire detection solution. Turns out, we have rather antiquated ways of detecting fires triggered by humans seeing fire or

smelling smoke and activating alarms and/or automatic systems that activate when environmental variations in air composition or temperature are detected.

What if a machine could be taught to **see a fire** and react accordingly? Turns out the machine needs a lot of help from humans to understand what a fire is and what it is not. In AI circles, video images are annotated by humans and this is the key data that is fed to the machine to develop and refine algorithms. The challenge of developing powerful algorithms relies on drawing insights from well annotated and large datasets. **No wonder in this context that the interest in and demand for talent that has insights into how to harness and interpret data is so high!**

And this development has not gone unnoticed:

- The unprecedented rapid development of RNA vaccines to combat COVID, largely on the back of insights from big data sets
- The US venture capital industry raised an unprecedented amount of capital in 2020 and 2021, almost \$300 billion is “dry powder” waiting to be invested and AI seems to a very big domain of interest
- 3,200 AI related startups raised \$52 billion in 2022 (Global Data).
- \$40 billion has been invested in the first 6 months of 2023 (Reuters)
- Almost \$100 billion has been invested by companies in AI (Meta, Amazon, Google, et al) in 2022 (Statista)

AI is not only set to disrupt but will redefine the very concepts of “retail”, “education”, “healthcare”, “banking”, “government”, you name it. The impact of AI is already being felt but more importantly will be played out in the future. **That is why I have set the time frame as 2030.**

The Future Context Piece

AI opens up a pandora's box of opportunities and possibilities that will play out in the future. Established organizations face inevitable challenges when navigating from the present to the future especially when the context of the future looks nothing like the context of the past or the present. This is why established organizations, including universities, find transformation so difficult to achieve. The comfort zone of corporates is to narrow the focus of exploration to the practical and probable as opposed to open possibilities. Creativity is about exploring possibilities and as students you have unbridled freedom to do so.

Governments, companies, consultancies and experts across many fields also actively share insights and perspectives which may be helpful to your group's research efforts. As a group, you will navigate through the deconstruction phase (understanding what is) and develop a reasonably detailed vision of the future context based on building blocks (“factors”) taking into account elements that are changing or in flux (“trends” or “developments”) or remaining relatively stable (“states” or “principles”) over time. We will have more to say about this in the introductory session.

Determining what is **relevant** and **meaningful** relies on both research and intuition (hunches). Dependent on domain, the research could span many fields including cultural, psychological, demographic, sociological, biological, evolutionary, economic or technological, among others. There is an abundance of insights and perspectives to be uncovered in research papers, books, articles, internet/social media, movies, blogs, opinion leaders, to name a few. For an amuse bouche, check out **2030 Perspectives** in MyCourses.

Each group will submit:

- A maximum 5 page (excluding exhibits & resource bibliography) written executive summary detailing the future context created and elements of the process used to create it **AND**
- A 5 minute video describing your future context directed toward an audience of your choosing. For some inspiration, have a look at the **Apple Knowledge Navigator video** (1985) in MyCourses.

The Team

- 1) You will be working in teams of ideally 6 students – “founding teams” display diversity and this will be no different in terms of gender, nationality and discipline (to the extent possible);
- 2) I will work with each team as a Mentor providing guidance, advice and constructive feedback throughout the process. Having said this, remember your team “owns” the vision you create!

Schedule of Coming Attractions (to be announced in due course)