

HOW WILL WE FEED THE WORLD IN 2050?

WATER + ENERGY → FOOD

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SFIN-6009-002 Business and Design Thinking Project 2 Problem Framing

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INTRODUCTION

We started with an interest in water and energy inputs into food...

We are a group of masters students engaging with Protein Industries Canada on a blue sky project to execute an overarching vision to:

**"POSITION CANADA AS A LEADING
GLOBAL SOURCE OF SUSTAINABLE
PLANT PROTEIN [...] [BY INSPIRING]
INNOVATION AND [...]]
COLLABORATION"**

(PROTEIN INDUSTRIES CANADA, N.D.)

SCENARIO

“One third of greenhouse gas emissions come from agriculture” (Gilbert, n.d.).

AT Karney predicts that by 2040, 60% of protein consumption will be from plant-based alternatives (The Guardian, 2019).

The fact “that Canada currently processes only half of its agricultural output demonstrates the extent to which the food processing sector is underdeveloped” (Senate Canada, 2019, p. 10).

Supercluster strategy: “To remain at the forefront of competition, address key challenges and build a shared advantage, firms must partner in new ways.” (Government of Canada, 2018).

Have plenty of
vegetables and fruits

Eat protein foods

Make water
your drink
of choice



Choose
whole grain
foods

“BY 2050, GLOBAL FOOD DEMAND IS EXPECTED TO RISE BY

+70%

ON THE BACK OF 3,000,000,000 MORE MIDDLE-CLASS CONSUMERS – MOSTLY IN ASIA – WHOSE DIETS ARE SHIFTING TO INCLUDE MORE PROTEIN.”
(PROTEIN INDUSTRIES CANADA, N.D.)

“THE GLOBAL PLANT-BASED PROTEIN MARKET IS ESTIMATED TO GROW

+54%

BY 2023 – TO \$14,800,000,000”

(PROTEIN INDUSTRIES CANADA, N.D.)

**How might we catalyze
ecologically responsible
businesses to grow Canada's
value added protein sector?**

PROBLEM STATEMENT

SUPERCLUSTER: a very dense area of business activity containing a critical mass of large and small companies, post-secondary and other research institutions (Government of Canada, 2018).

VALUE-ADDED: "the production of a product that enhances its value" (University of Maryland, n.d.).

Eg. Grow peas and utilize the pea protein to produce Beyond Meat burgers.

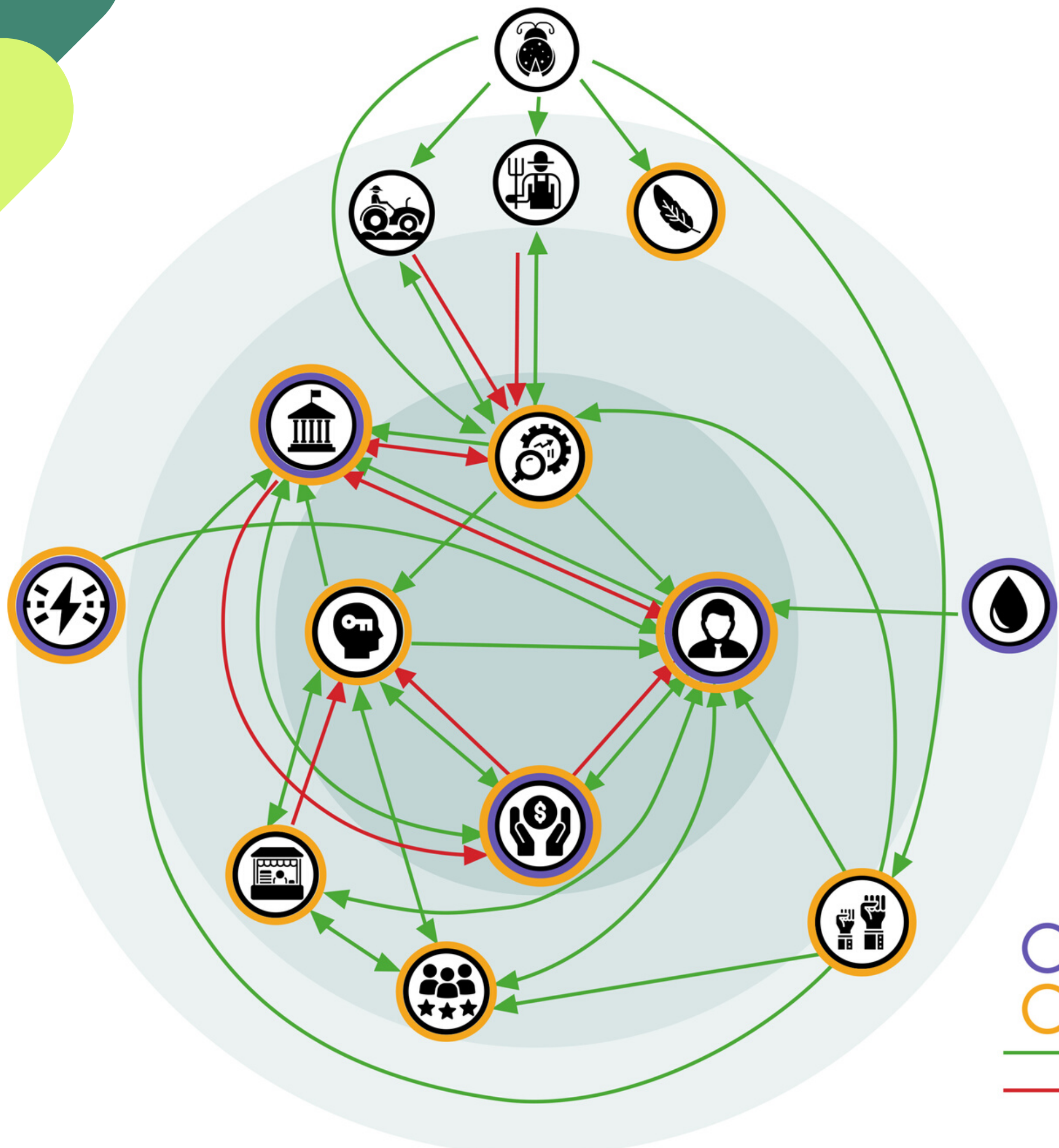
THE INNOVATION PHASES:





IDEA: Inspiration, exploration and experimentation of several ideas

VALUE: The process of acquiring the basic resources (infrastructure, capital, etc.) to formalize an idea to move forward with

SCALE: Increase quantities and reach

STAKEHOLDER MAP













-  Power
-  Influence
-  Ideas
-  Investment

PRIMARY STAKEHOLDERS

-  Entrepreneur
-  Intrapreneur
-  Researcher
-  Investment

SECONDARY STAKEHOLDERS

-  Farmers
-  Ranchers
-  First Nations
-  Wild Life
-  Retail
-  Consumer
-  Water Utilities
-  Energy Utilities
-  Government
-  Activists



Pete Cobban
Senior Associate



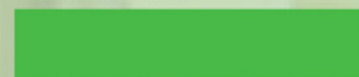
district
ventures
capital

“I focus on the details and assume all tasks will be done digitally - for efficiency”

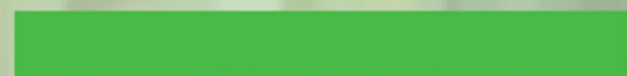
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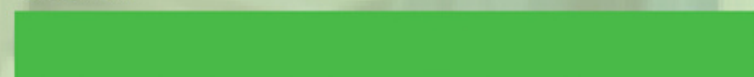
Grow



Make



Sell



Goals:

Make a good salary and benefits
Help grow the economy
Get things right so that the firm prospers

Frustrations:

Government red tape
Companies that don't grasp the digital world
Long work hours

Opportunities:

Desire and expertise to start his own firm
Teach firms to use technology
Influence partners on new trends

Attributes:

Age: 48
Location: Calgary, AB
Household Income: \$90,000
Gender: Male
Marital Status: Single

PERSONA

INVESTOR



**MAPLE
LEAF**

Katherine Kerr
Director of Business Development

“I need to improve processes that cost too much money at the front end”

PERSONA

INTRAPRENEUR

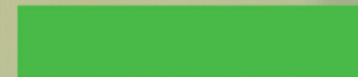
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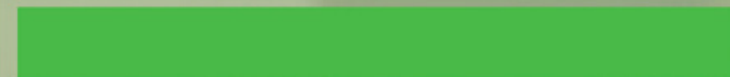
Grow



Make



Sell



Goals:

- Innovate
- Reduce company expenses
- Improve brand quality
- Move up the company hierarchy

Frustrations:

- Her Manager
- Paper work formats
- Time management
- Sales results
- Designing desirable products

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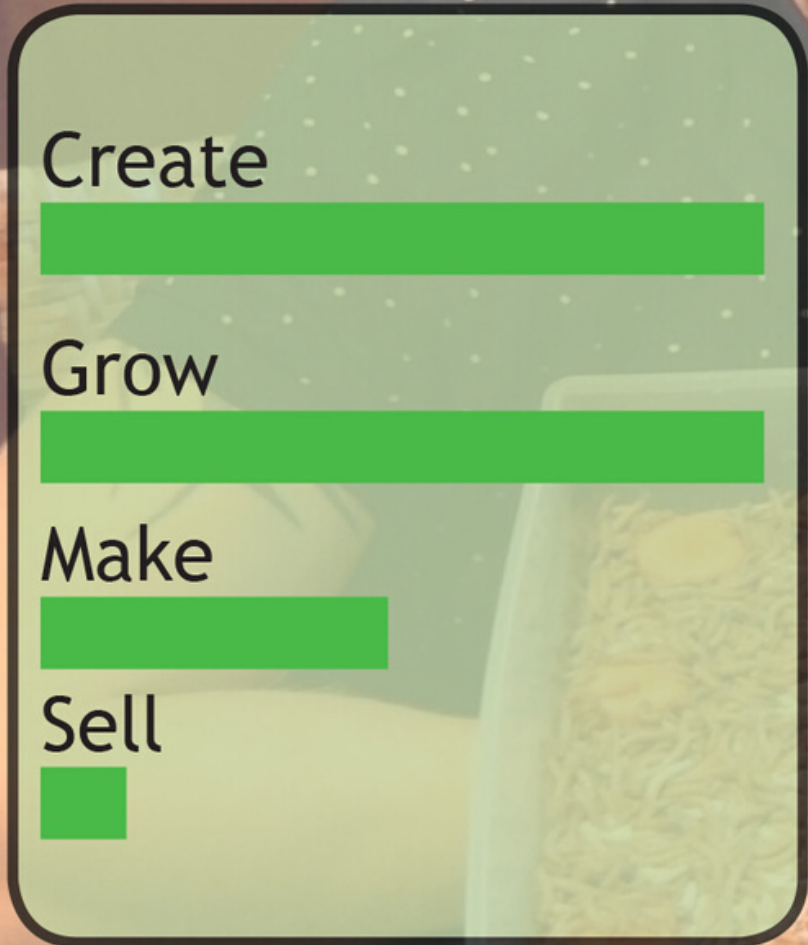


Fred Bell Self Employed

“Now I realize that we might just be switching one bad practice for another”

PERSONA

ENTREPRENEUR



Goals:

Feed the world a sustainable and delicious insect based protein
Build a thriving business

Frustrations:

When we scale our business we may no longer be as sustainable as we had initially planned
Struggles to be ecologically responsible

Opportunities:

Research grants
Open minded
Exploratory
Risk taker

Attributes:

Age: 32
Income: \$38,000
Location: Norwood, ON
Reports to: Family/sister
Marital status: Divorced no kids

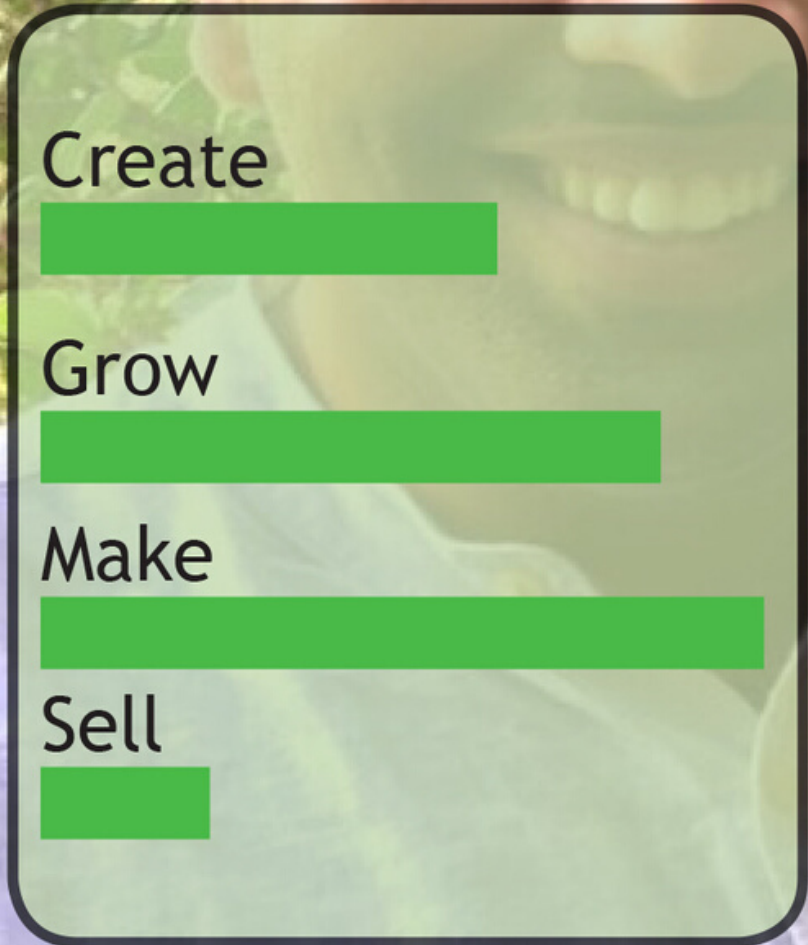


Nishant Singh
PhD researcher



“My supervisor is inspiring me to explore sustainability in foods”

PERSONA
RESEARCHER



Goals:

Graduate with the credential
Secure employment after graduation

Frustrations:

The sluggishness of the entrepreneurial environment
Not being able to own his ideas to capitalize on them

Opportunities:

Feels imposter syndrome, how can he solve this?
Has a brilliant idea but is worried the university will steal it

Attributes:

Age 27
Perfect undergraduate GPA
Saskatoon, SK
In a relationship, has baby on the way



Government



Navdeep Bains
Title: Minister
Company: Innovation,
Science and Economic
Development

"The Protein Supercluster
is just getting started..."



Energy Utilities



Name: M. J. Marsh
Title: CEO
Company: Saskpower

"Our target is to make
renewables 50% of our
grid power by 2030"



Water Utilities



Aaron Schweitzer
Title: Manager of Water
Rights, Approvals and
Compliance
Company: Saskatchewan
Water Security Agency

"We must fairly allocate
the water supply of Sas-
katchewan"



Farmers



Name: Colin Rosengren
Title: Chickpea Farmer
Company: Three Farmers

“I’m the third generation on the farm, we farm 5,000 acres of a wide variety of crops... It’s a family affair”



Ranchers



Elron Green
Title: Ranch Manager
Company: Canadian Beef

“Our heart is in the land and we love the smell of nature”



First Nations



Autumn Peltier
Title: Activist
Company: Planet Earth

“The countries of the world must ‘warrior up’, stop polluting the planet, and accord water the same rights and protections as human beings”



Consumer



Peter Chan
Occupation: Insurance Underwriter
Company: Chubb Insurance

“I want to make a difference for our planet by moving away from meat, but I still love the taste”



Activists



Rou Reynolds
Title: Activist
Company: Anarchy UK

“If I protest peacefully will I be repressed by violence?”



Wild Life



Cricketty Crick
Title: Swarm Sergeant
Company: Entomo

“Must eat. Must breed. Must thrive. FOR THE HIVE!”

STAKEHOLDER MATRIX PRIMARY



	Investment			Intrapreneur		Entrepreneur			Researcher
	Venture Capital	Bank	Protein Industries Canada	Maple Leaf Executive	Maple Leaf Factory Floor	Banza	Deepwater	Entomo	PhD
SAYS	"I'm looking for the most innovative ventures in the industry"	"How can I create value for the bank?"	"We want to build a stronger protein industry for Canada"	"I want to lead initiatives to support the company's new vision"	"Why doesn't my manager see that I am working with faulty equipment that needs upgrading?"	"I want to provide the world with gluten free options."	"I'm so glad my school project inspired me"	"The world is changing and aligning with my business"	"How can I graduate my PhD in time?"
THINKS	"How can we make the most profit"	"How can I move up to a management position?"	"How can we bring more partners to the table?"	"How can I execute within the time constraints"	"How can I make more money? Bills, Bills, Bills, Bills,"	"Is my recipe viable"	"Have I taken on too much risk?"	"How can I make the best family business possible"	Imposter Syndrome
DOES	Thorough analysis of potential prospects	Thorough analysis of value for the bank	Facilitates conversations and partnerships	Works reliably	Notices details of the production process	Secures funding for factory	Shares tech I've made to grow ecosystem	I enjoys insect farming.	Builds on previous research
FEELS	The pressure of performing in a stressful industry	Stressed and under pressure	Excited and a sense of responsibility	Strong loyalty to the company	Feels over worked, under payed, stepped on, betrayed	Pressure to maintain demand to stay on shelves	Vindicated	Nervous I'm selling myself out by partnering with a large corp	Agitated by the bureaucratic university system

MOST INFLUENTIAL **LEAST INFLUENTIAL**



STAKEHOLDER MATRIX SECONDARY

	Government	Consumer	Retail	Water Utilities	Energy Utilities	First Nations	Activists	Farmers	Ranchers	Insects
SAYS	"Today we are investing in superclusters so tomorrow we will have an innovation economy"	"I'm a flexitarian - I try to be eco friendly but also enjoy nice restaurants"	"I know this strategy isn't ideal, but head office insisted"	"Conserve water to ensure ample supply for everyone"	"We are working with other provinces to generate alt energy systems"	"New food gathering techniques would preserve our land"	"The countries of the world must 'warrior up', stop polluting the planet, and accord water the same rights and protections as human beings"	"Pulses are a valuable source of protein"	"Eating meat is an essential part of a healthy diet"	"Must Eat, Must Breed, Must Thrive, FOR THE HIVE!time?"
THINKS	How can I align innovation with Canadian values	Do I have to go to Whole Foods to buy the Beyond Meat burger?	Will mandated product placements hinder our sales?	Large corporations are depleting our water supply	Could alt energy generate surplus power to export for foreign currency?	Will Indigenous foods be accepted in society?	If I protest peacefully will I be repressed by violence?	Can I raise my prices based on the growing demand?	Will the new food guide impact my cattle sales?	Why Am I being sprayed with acid, I was just having lunch here.
DOES	Implements programs to foster entrepreneurship	Orders monthly food subscription boxes (local produce)	Provides tips on store organization to owner	Educates companies of tips for water efficiencies	Educates the Saskatchewan Rate Review Panel to set appropriate prices	Exercises land/water ownership rights (treaty agreements)	Peltier, addresses the UN General Assembly as a civil society representative	Forms partnerships with local businesses for recipe integration	Lobbys the government to contest the USMCA	Keep unwanted pests away, loses sight of population growth and becomes the invasive pest
FEELS	Driven to grow superclusters during his 2nd term in office	Pressed for time and tries not to jeopardize "healthy" eating	Pressure to achieve yearly sales targets	Pressure to only grant licenses to companies benefiting the economy	Nervous if the costs of alt energy will lead to job cuts	Nervous factories will deplete basic resources within my community	Many people don't think water is alive or has a spirit	Pressure to maintain family legacy in a changing environment	Frustrated by vegan replacements for "real food"	Extremely anxious and helpless

MOST INFLUENTIAL

← LEAST INFLUENTIAL



How might we incentivize a greater share of the general public to ideate and start ventures in this sector?

Entrepreneur



PROTEIN
INDUSTRIES
CANADA

Stakeholder Collaboration



Fred Bell
Self Employed

“Now I realize that we might just be switching one bad practice for another”

Create



Grow



Make



Sell



Goals:

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PERSONA ENTREPRENEUR



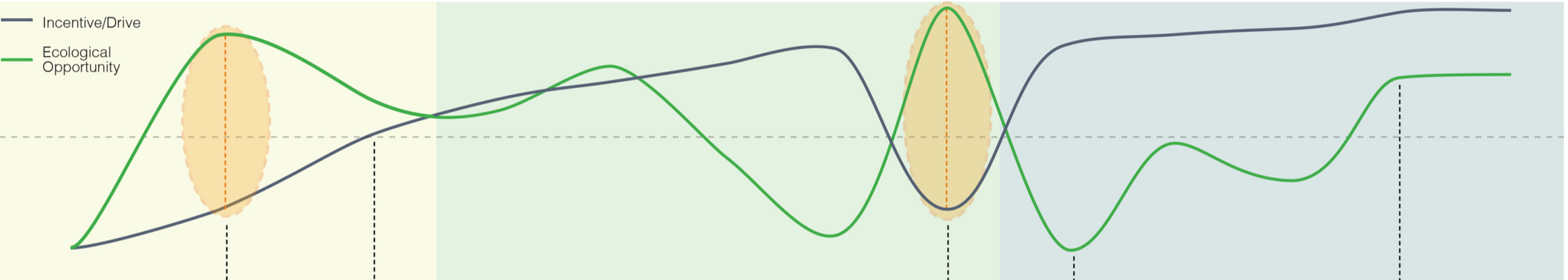
JOURNEY MAP: Banza Chickpeas



Innovation Process



Curve



Emotion



Opportunity

How might we take advantage of a blue ocean market?

How might we turn setback into eco pivot?

How might we encourage retailers to stock eco friendly products in prime locations?

What if

This is too risky?

Consumers don't understand instructions?

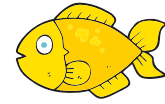
Signing with national retailer jeopardizes my idea?

I don't meet my bottom lines?

What if I can't hire expertise?



JOURNEY MAP: Deep Water Farms



IDEA

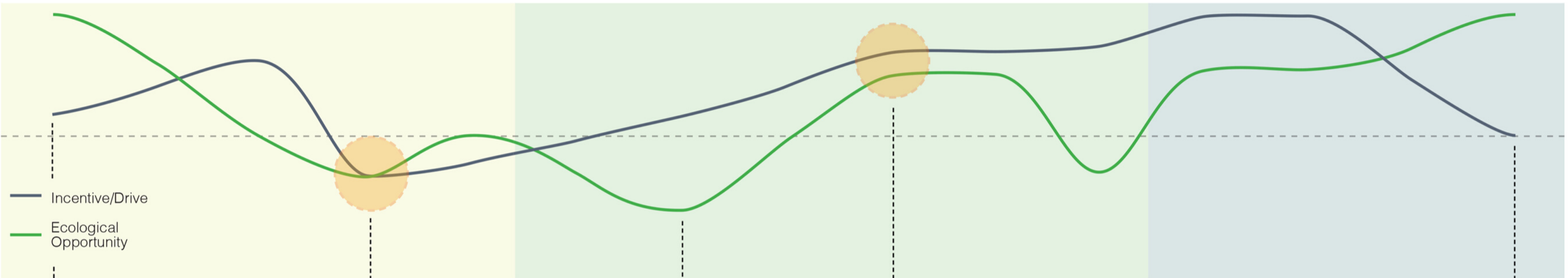
VALUE

SCALE

Innovation Process



Curve



Emotion



Opportunity

How might we experiment without taking on too much risk?

How might we generate buzz and capital?

How might we share technology to grow the market?

What if

What if my project was only good for school?

I don't get enough funding?

My technology is stolen?
What if a competitor gets a patent before me?



JOURNEY MAP: Entomo Farms



IDEA

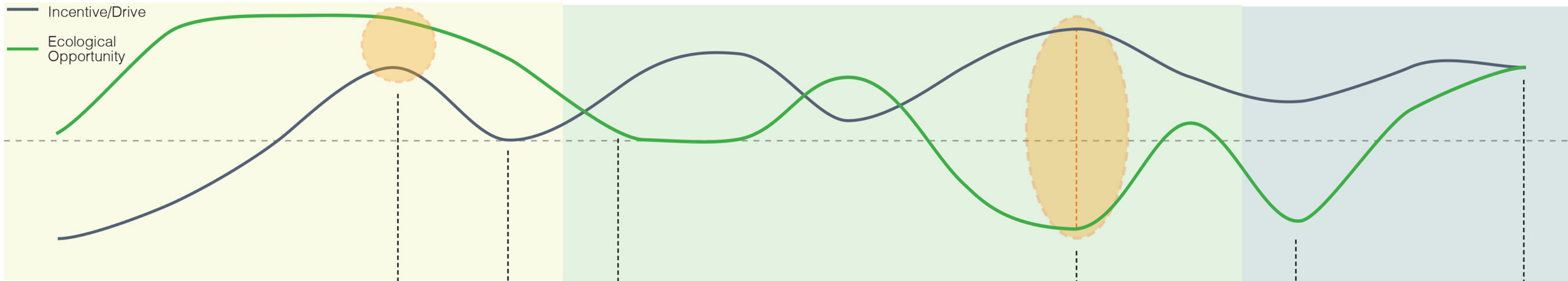
VALUE

SCALE

Innovation Process

- Identifies need
- Explores insect animal feed business
- Gets inspired through traveling
- Draws inspiration from "Edible Insects" UN white Paper
- Researches & consults experts
- Secures angel investors
- Secures funding via Hedgewood Ventures
- Develops family funding model
- Exports Globally
- Partnership with Loblaw's
- Secures capital from Maple Leaf
- Builds farm in Madagascar
- Expands Operations
- Grows via automation and team

Curve



Emotion



Opportunity

How might we transform passion into eco business?

How might we persuade angels to support our work?

How might we convince investors to support an idea consumers may not be ready for?

How might we increase automation while supporting the local community?

What if

The world isn't ready for my innovation?

What if I lose my vision after external funding?

In building an international farm I lose control over operations?

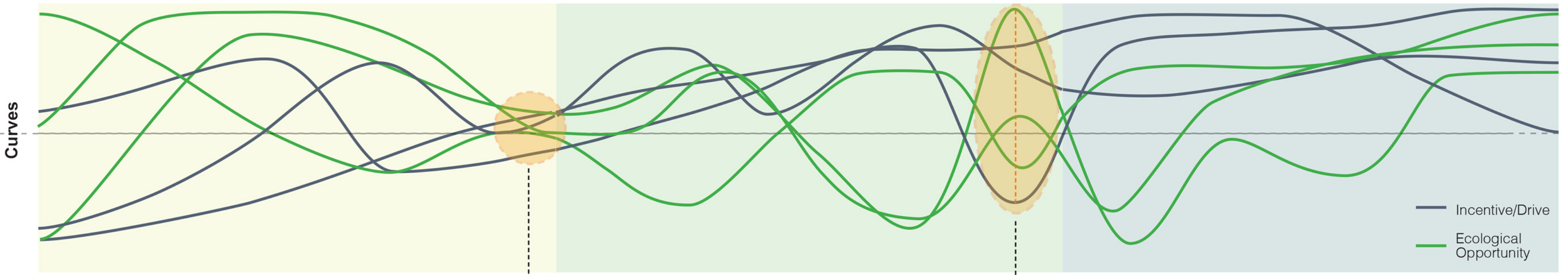


JOURNEY MAP: Entrepreneur

IDEA

VALUE

SCALE



— Incentive/Drive
— Ecological Opportunity

Phase Transitions

What if retail partnerships were incentivized solely on environmental opportunity.

How can we keep environmental enthusiasm high as the business scales?

Opportunity

How might we incentivize a greater share of the general public to ideate and start ventures in this sector?

Does getting investors support have to mean jeopardizing ecological outcomes?

How might we align incentives of growth with environmental opportunity?

A worker in a blue cleanroom suit and white hard hat is working on a pharmaceutical production line. The worker is wearing a white hard hat, a blue face mask, and blue gloves. They are standing in front of a large stainless steel machine that is producing pink tablets. The machine has several rows of circular molds, each containing a pink tablet. The worker is holding a small container and appears to be inspecting or packaging the tablets. The background shows more of the factory floor with various pieces of equipment and pipes.

How might we incentivize employees at all levels of the company to generate innovative ideas?

Intrapreneur



**MAPLE
LEAF**

Katherine Kerr
Director of Business Development

“I need to improve processes that cost too much money at the front end”

PERSONA

INTRAPRENEUR

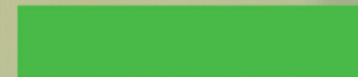
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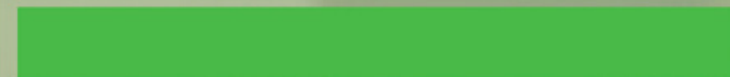
Grow



Make



Sell



Goals:

- Innovate
- Reduce company expenses
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- Move up the company hierarchy

Frustrations:

- Her Manager
- Paper work formats
- Time management
- Sales results
- Designing desirable products

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Attributes:

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JOURNEY MAP: Maple Leaf (Director of Business Development Path Internal)

IDEA

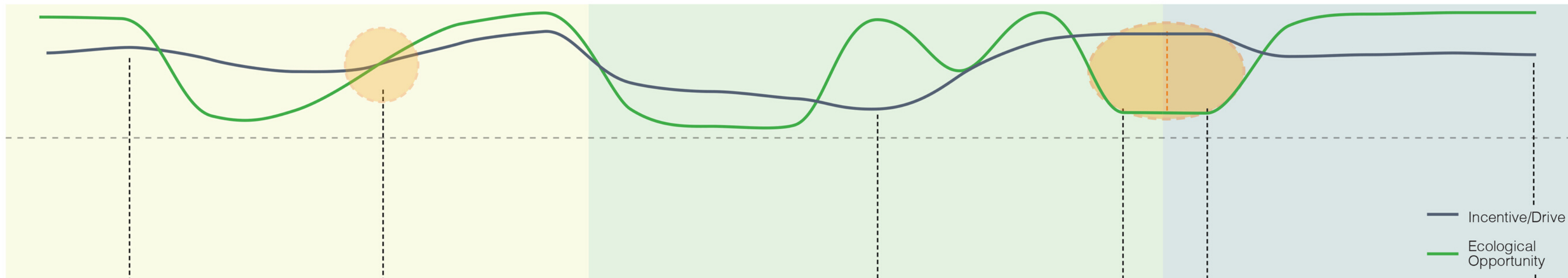
VALUE

SCALE

Innovation Process

Receives news of Listeria outbreak	Implements safety, shared value & sustainability strategies	Analyzes annual planning results	Oversees team's research	Evaluates pool of Ideas	Engages cross functional teams via steering format	Grants permission to Investigate	Builds business case/critical path timing	Oversees testing process	Manages prototyping and suggests revisions for iterations	Engages environmental team for review	Collaborates with teams for business alignment	Receives funding (internal vs external)	Manages team until launch / shipping	Briefs VP to prepare shareholder proposal	Allocates budget to build production infrastructure	Collaborates with marketing / PR to generate new sub brands	Expands Team	Analyzes safety/environmental audit results (quarterly)
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Curve



Emotion



How might we create structures to efficiently gather the best ideas?

How might we save time throughout production without skipping steps?

How might we encourage shareholders to consider triple bottom line?

Opportunity

What if there is a lack of team alignment on direction?

What if lack of vision prematurely kills the idea?

What if I don't receive environmental approval?

What if environmental review raises production costs?

What if my product doesn't sell because of brand alignment?

What if my allocated budget isn't enough?

What if



JOURNEY MAP: Maple Leaf (Director of Business Development Path Acquisition)

IDEA

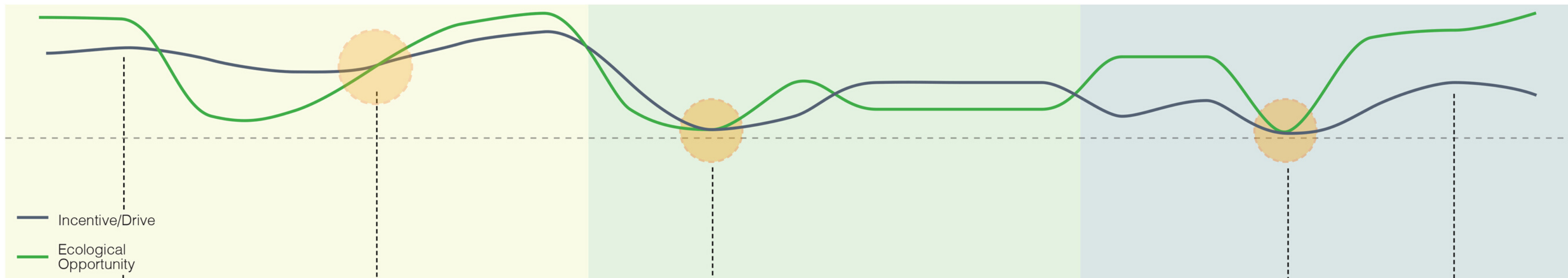
VALUE

SCALE

Innovation Process

Receives news of Listeria outbreak	Implements safety, shared value & sustainability strategies	Analyzes annual planning results	Oversees team's research	Evaluates pool of Ideas	Engages cross functional teams via steering format	Grants permission to Investigate	Builds business case/ critical path timing	Receives consensus of acquisition opportunity	Engages key stakeholders for evaluation/ funding	Receives shareholder/ board of directors approval	Reviews Term Sheet for negotiations	Is notified of purchase	Evaluates systems integration process	Collaborates with marketing/ PR/ on branding	Provides insight for financial integration	Ideates initiatives for culture integration	Organizes Cross functional teams	Analyzes safety/ environmental audit results (quarterly)
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Curve



Opportunity Emotion



How might we create structures to efficiently gather the best ideas?



How might we be open minded to acquisition opportunities?



How might we increase our innovation capacity by leveraging acquired talent?

What if

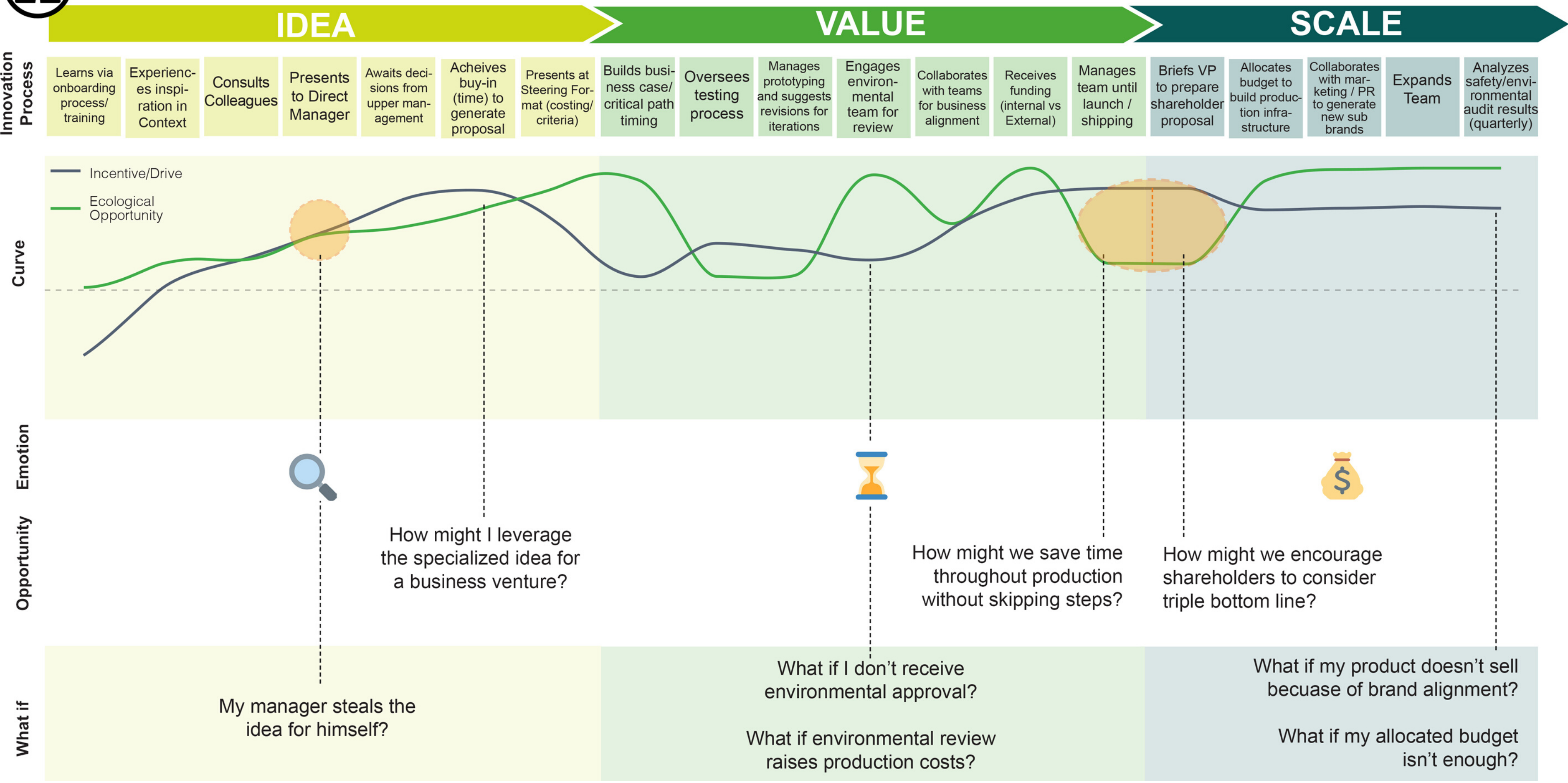
What if there is a lack of team alignment on direction?

What if lack of vision prematurely kills the idea?

Acquisition doesn't align with vision?

Financial integration priorities limit cultural integration priorities.

JOURNEY MAP: Maple Leaf (Factory Floor Employee Path Internal)





JOURNEY MAP: Maple Leaf (Factory Floor Employee Path Acquisition)

IDEA

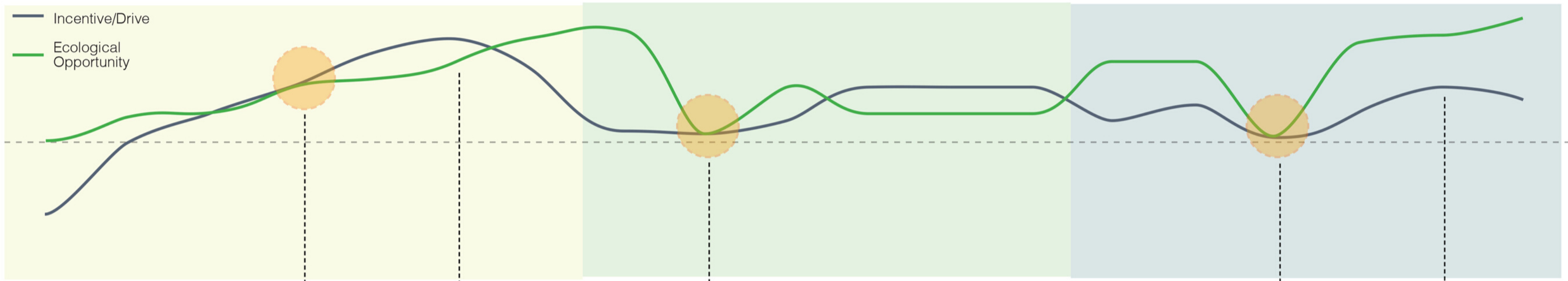
VALUE

SCALE

Innovation Process

Learns via onboarding process/training	Experiences inspiration in Context	Consults Colleagues	Presents to Direct Manager	Awaits decisions from upper management	Achieves buy-in (time) to generate proposal	Presents at Steering Format (costing/criteria)	Builds business case/critical path timing	Receives consensus of acquisition opportunity	Engages key stakeholders for evaluation/funding	Receives shareholder/board of directors approval	Reviews Term Sheet for negotiations	Is notified of purchase	Evaluates systems integration process	Collaborates with marketing/PR/ on branding	Provides insight for financial integration	Ideas initiatives for culture integration	Organizes Cross functional teams	Analyzes safety/environmental audit results (quarterly)
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Curve



Opportunity Emotion



How might I leverage the specialized idea for a business venture?



How might we be open minded to acquisition opportunities?



How might we increase our innovation capacity by leveraging acquired talent?

What if

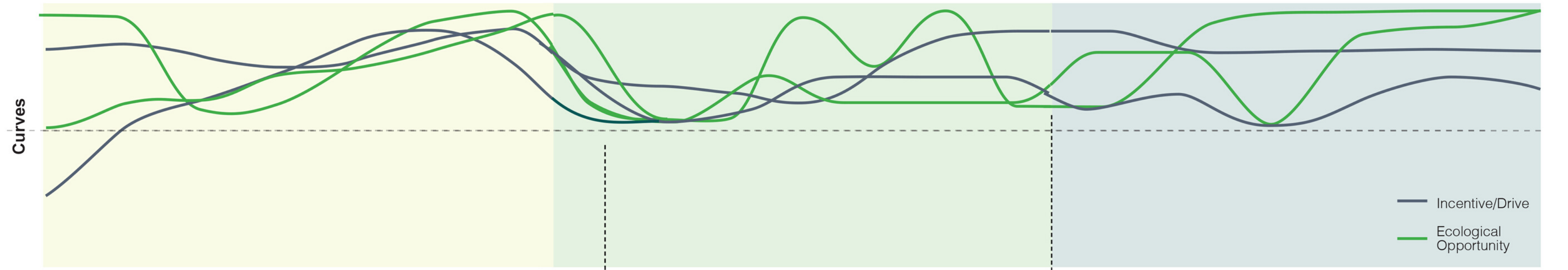
My manager steals the idea for himself?

Acquisition doesn't align with vision?

Financial integration priorities limit cultural integration priorities.



JOURNEY MAP: Intrapreneur



Phase Transitions

How might we maintain enthusiasm within the company beyond the initial idea?

How might we maintain consistency across all projects (internal vs acquisition)?

Opportunity

How might we incentivize employees at all levels of the company to generate innovative ideas?

How might we involve the environmental opportunities in an unexpected way through the value phase?

How might we make resource conservation/optimization a key performance indicator (KPI) throughout the entire industry?

How might we get investors excited about ideas with high sustainability potential?



Investor



Pete Cobban
Senior Associate



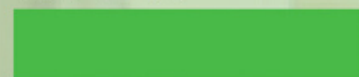
district
ventures
capital

“I focus on the details and assume all tasks will be done digitally - for efficiency”

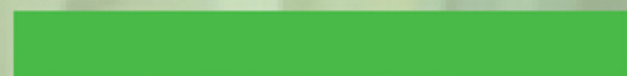
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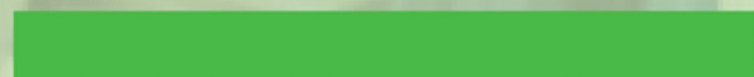
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Sell



Goals:

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Help grow the economy
Get things right so that the firm prospers

Frustrations:

Government red tape
Companies that don't grasp the digital world
Long work hours

Opportunities:

Desire and expertise to start his own firm
Teach firms to use technology
Influence partners on new trends

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INVESTOR



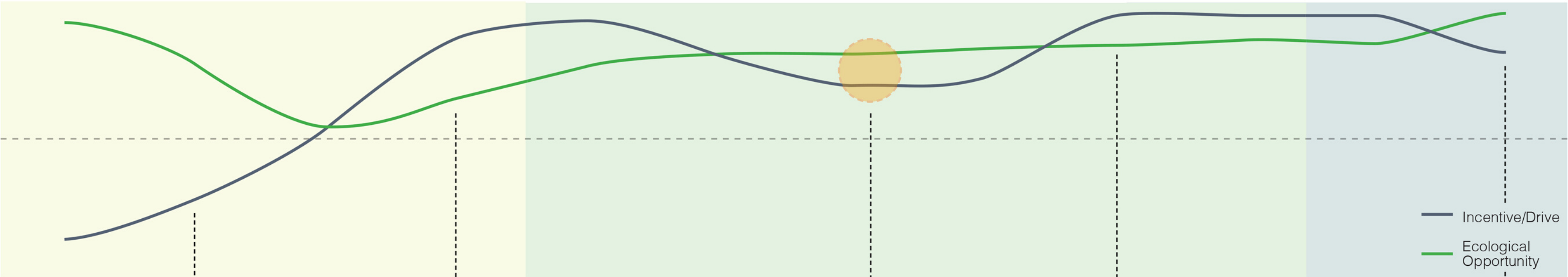
JOURNEY MAP: Venture Capital



Innovation Process

Engages in initial outreach	Received pitch	Evaluates pitch	Proceeds with Partners meeting	Meets with Partners & entrepreneur	Receives results of Partner evaluation	Receives results of committee evaluation	Initiates term sheet negotiation/ contract signing	Completes due diligence	Engages lawyer to drafts long form agreement	Executes plan	Grows partnership via branding, networking & financing
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Curve



Emotion



Opportunity

How might we find and creatively evaluate new prospects?

How might we make sustainability a priority in evaluation?

How might leverage our investors to foster a network effect?

What if

I embarrass myself in front of the partners?

I find information that counters the credibility?

District Ventures Capital does not have ample resources to solve all necessary problems?



JOURNEY MAP: RBC Investment Banker

IDEA

VALUE

SCALE

Innovation Process

References established relationship codified files

Requests financials (last 2-5 years)

Analyzes forecast for next 3-5 years

Reaches threshold of EBITDA

Develops competitive analysis

Decides to invest

Initiates check ins for support

Increases Investment

Curve

— Incentive/Drive
— Ecological Opportunity

Emotion

Opportunity

What if

How might we support unicorn sustainable companies outside of our traditional portfolio?



I miss information in my analysis?



How might we avoid mistakes of the dot com bubble?
How might we synchronize just-in-time investments?

I put our eggs in the wrong basket?





JOURNEY MAP: PROTEIN INDUSTRIES CANADA

IDEA

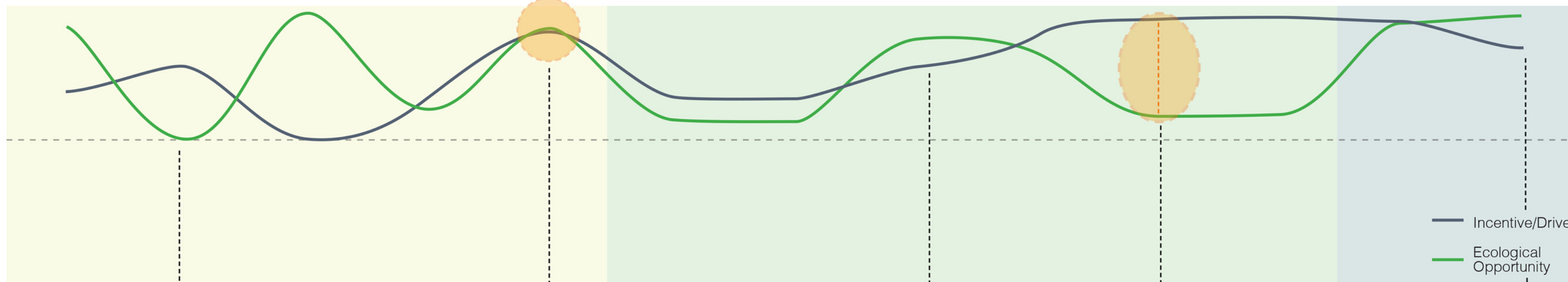
VALUE

SCALE

Innovation Process

Needs Identified and develops proposal	Receives political decision for funding	Develops mission/vision	Facilitates partnerships with members	Publishes RFP	Reviews and narrows proposals	Evaluates commercial, ecosystem, technical specifications	Contributes to Project Selection Committee decision	Oversees due diligence	Drafts and signs Master Project Agreement	Engages finance dept to provide funding	Expands partnership	Facilitates ecosystem development
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Curve



Emotion



Opportunity

How might we gain political assent for more funding and expansion?

How might we form selection committees to foresee?
How trends can be embodied in partnerships?

How might we maintain excitement for ecosystem development?

What if

My RFP doesn't garner large enough partnership?

The contract jeopardizes the sustainable vision?

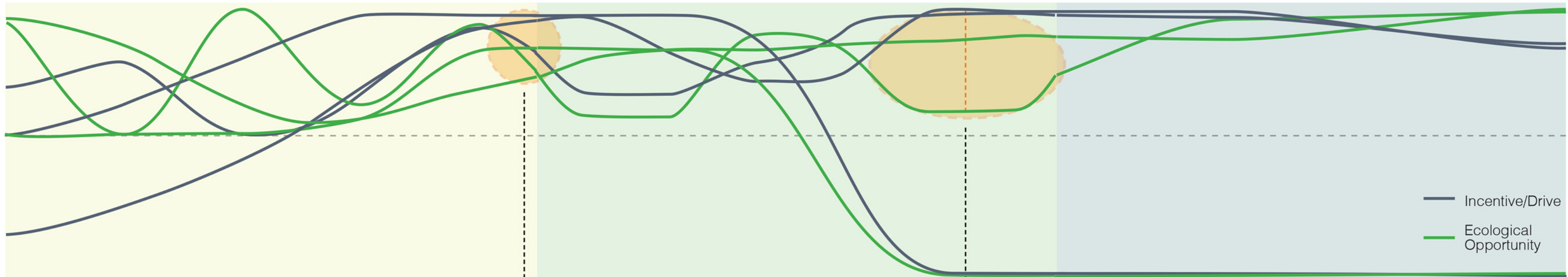
The human factor compromises partnerships?



JOURNEY MAP: Investment



Curves



— Incentive/Drive
— Ecological Opportunity

Phase Transitions

How might we maintain an ecological philosophy throughout the investment process?

How might we identify success at the idea phase as well as we do at the scale phase?

Opportunity

How might we get investors excited about ideas with high sustainability potential?

How might we ensure our investments reach their full potential while we reach our returns?

How might we realize the high potential for environmental outcomes?

A cleanroom laboratory setting with several researchers in white protective suits. They are gathered around a piece of scientific equipment, possibly a microscope or a specialized imaging device. The room is brightly lit and has a clean, industrial appearance. The word "EAST" is visible on the wall in the background.

**How might we align research
around grand
challenges/wicked problems?**

Researcher

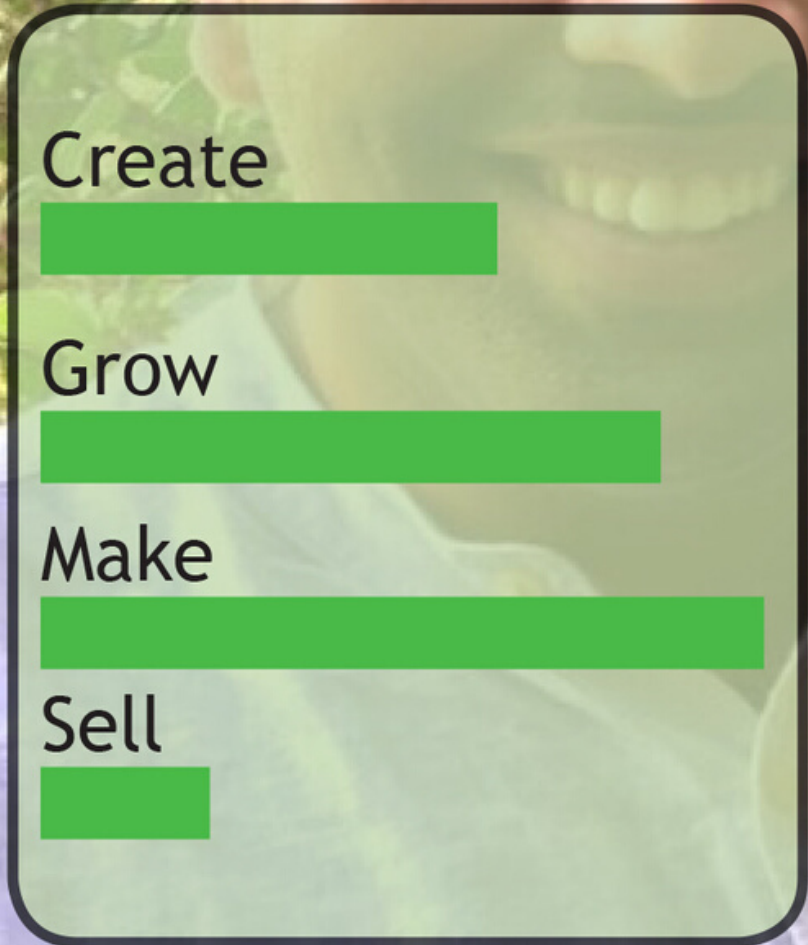


Nishant Singh
PhD researcher



“My supervisor is inspiring me to explore sustainability in foods”

PERSONA
RESEARCHER



Goals:

Graduate with the credential
Secure employment after graduation

Frustrations:

The sluggishness of the entrepreneurial environment
Not being able to own his ideas to capitalize on them

Opportunities:

Feels imposter syndrome, how can he solve this?
Has a brilliant idea but is worried the university will steal it

Attributes:

Age 27
Perfect undergraduate GPA
Saskatoon, SK
In a relationship, has baby on the way



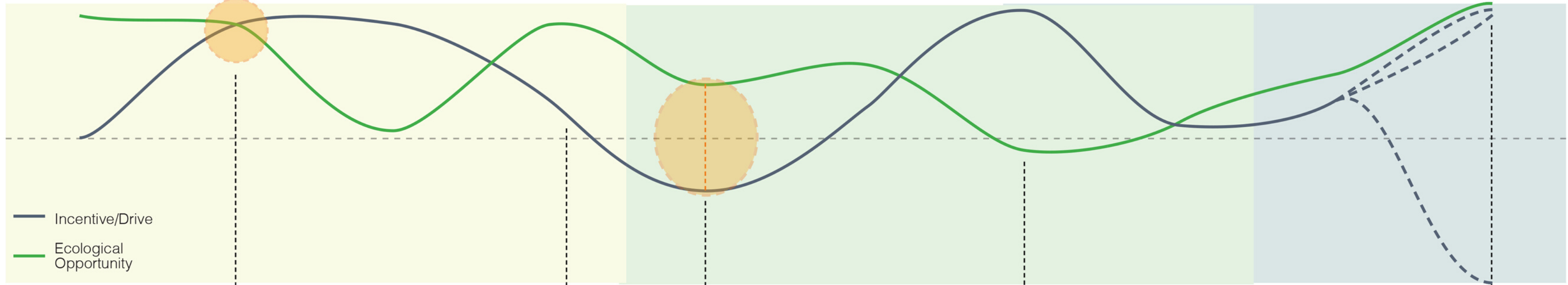
JOURNEY MAP: PhD Researcher



Innovation Process



Curve



Emotion



Opportunity

How might I leverage the specialized idea for a business venture?

How might I construct a thesis that is industry relevant?

How might I learn the skills to run my own venture?

What if

Government changes and my funding is taken away?

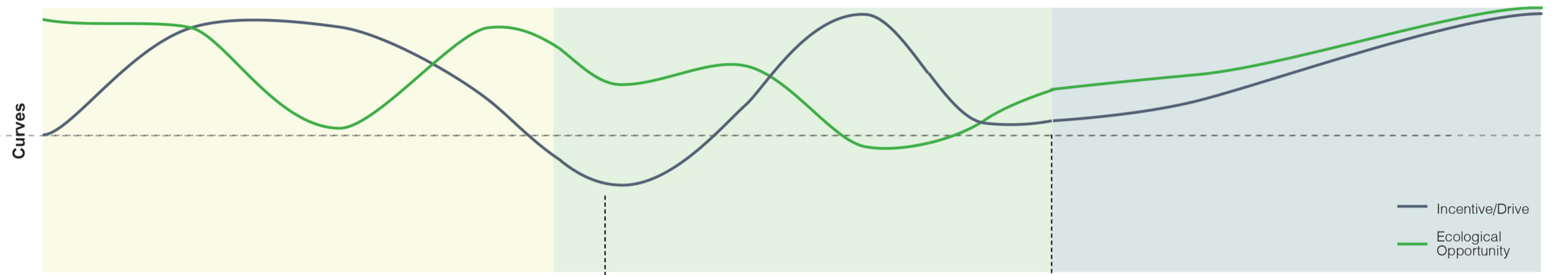
Someone else already has my idea?

Someone with more resources gets the patent first?

My research goes nowhere?
There are no openings at my university?
The university steals my IP?



JOURNEY MAP: PhD Researcher



Phase Transitions

How might we prepare our thesis in an accessible format?

How might we demonstrate technical information in an understandable way the public can use to generate ideas?

Opportunity

How might we align research around grand challenges/ wicked problems?

How might we test our theories in a real world setting?

How might I own and capitalise on what I create?

UNMET NEEDS

IDEA

- Education that empowers all stakeholders to be connected innovators.
- Early stage capital to grow ideas.
- Physical immersion in places where agrifoods are made.
- Reforming the level of openness.

SCALE

- Grow international exports to feed the world sustainably.
- Integrate resource conservation as an industry-wide KPI.

VALUE

- Sharing practices and technology.
- Industry-wide information standards and branding to inform product's ecological impact.

ETHICAL FRAMEWORK FOR PROTEIN SOURCES

ie. insects vs animals

BARRIERS

TRADE

“The government must also work to break down barriers to growth within our borders. This includes facilitating interprovincial trade and establishing safer, more efficient modes of transportation across our geographically vast country” (Canadian Senate, 2019, p. 3)

LIMITED ANGEL/VENTURE CAPITAL IN THE PRAIRIES

“Less than three per cent of venture capital investment flows into the Prairie region, and only a fraction of that is targeted to the agriculture and food processing sector.” (Protein Industries Canada, 2019)

INTELLECTUAL PROPERTY

One of the best parts of being entrepreneurial at Waterloo is that your ideas are completely yours. Our intellectual property (IP) policy states that all intellectual property is owned by the inventor. So, even if you create something on Waterloo campus, it's all yours; Waterloo doesn't own any of your idea. If this doesn't impress you, it's worthwhile to note that this IP policy isn't something that exists at all other universities – often, a university will own the rights to its students' IP.” (University of Waterloo, 2019)

LIMITED LABOUR MARKET

“In 2017, the average job vacancy rate in the agriculture sector varied between 4.5% and 6.3%, while the average for all Canadian industries was only 2.8%.” (Canadian Senate, 2019, p. 3)

PRODUCTION CONSOLIDATION

“The food industry typically has had lots of small plants and lots more retail. [...] The new footprint for globally competitive manufacturing tends to be larger plants [...] located close to workforces as well as markets and transportation corridors” (Maurino, 2014)

REGULATIONS

Canada's system is increasingly inhibiting industry's nimbleness by restricting innovative practices and products, by being slow to make approvals, and by not being coordinated across departments and levels of government. Most importantly, there is no central body that looks at the cumulative impact of regulations from multiple departments on the sector's competitiveness.” (Canada's Economic Strategy Tables, n.d., p. 5)

PSYCHOLOGICAL FOUNDATION

Price Signal Informational Limitations --- Bounded Rationality --- Risk Aversion ---
Representativeness Bias --- Economic Ideology --- Sunk Cost Fallacy

CRITERIAS

WE ARE INTERESTED IN THE FOLLOWING:

RESEARCH → INNOVATION

- Increased number of disruptive innovations
- Increased number of researchers studying value-added proteins

INCREASED INVESTMENT

- Ubiquitous and Diverse Growth of the Product Space (Hidalgo, 2016)
- VC and angel investors to make up a larger share of Canada's investment market
- Productivity Gains

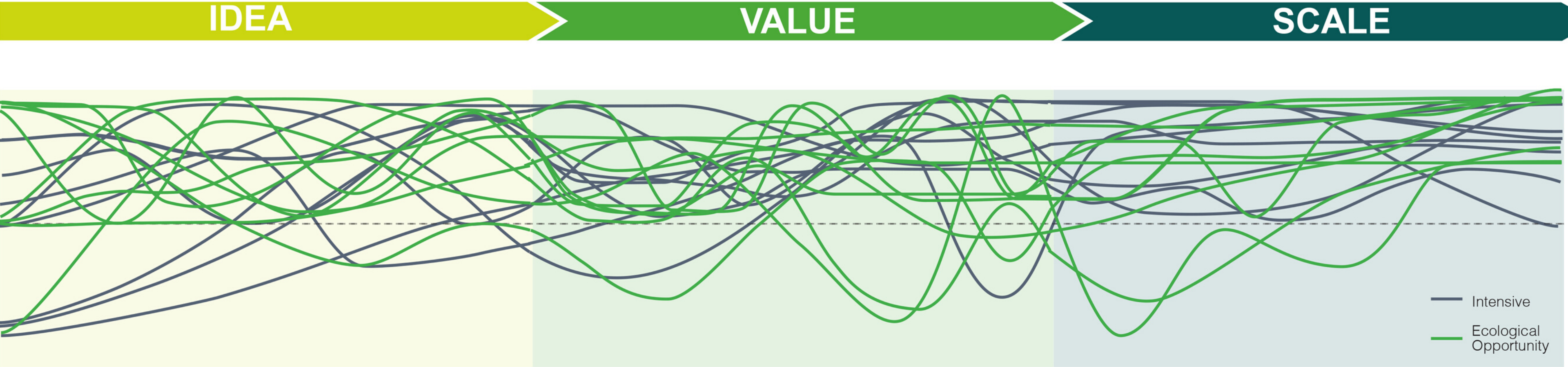
GLOBAL RANKING

- Value of total exports
- Position in global agrifoods export ranking

ECOLOGICAL/SOCIAL

- Scale of collaboration between industries for ecological efficiencies
- Resource efficiency – matrix of increased output for input
- Product engagement

INTERVENTION ROAD MAP – LEVER OF CHANGE



FOCUS: IDEA PHASE

Rationale: Ashby’s Law of Requisite Variety: matching Canada’s variety to the world’s by accessing and recombining our collective tacit knowledge (Naughton, 2017).

REVISED HMW QUESTION:

How might we foster idea generation focused on Canada’s value added protein sector to grow its potential for ecological and social impact?

FUTURE EXPLORATION

FUTURE EXPLORATION

Crowdsourcing

Eco-Footprint System Branding

Collaboration (Grand Challenges)

Intrapreneurship Incentives

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