

Mitigating unintended technological harms in a shifting financial landscape

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Scotiabank

OCADU Design4 Team:
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Land acknowledgment

While the Scotiabank and Design4 teams are spread across Canada, in the spirit of reconciliation, we acknowledge the land on which Scotiabank's head office and OCAD University sit is the ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee, the Anishinaabe, and the Huron-Wendat.

Positionality Statement

For the scope of this work, we conducted only secondary research during a short period of time. We were not able to engage with the stakeholders and persona groups discussed throughout this report or conduct any primary research.

Although we have made every effort to be as thorough and respectful as possible in considering our research and preparing this work, we do not necessarily share the lived experiences of those discussed. Therefore, we would like to acknowledge that there may be gaps and/or assumptions not identified during the creation of this work.

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Project Overview

Introduction

- Research Question
- Methodology

Shifting Financial Landscape

- Signals and Trends
- Technological Harms
- Threats/Implications to Traditional Banks
- Key Forces

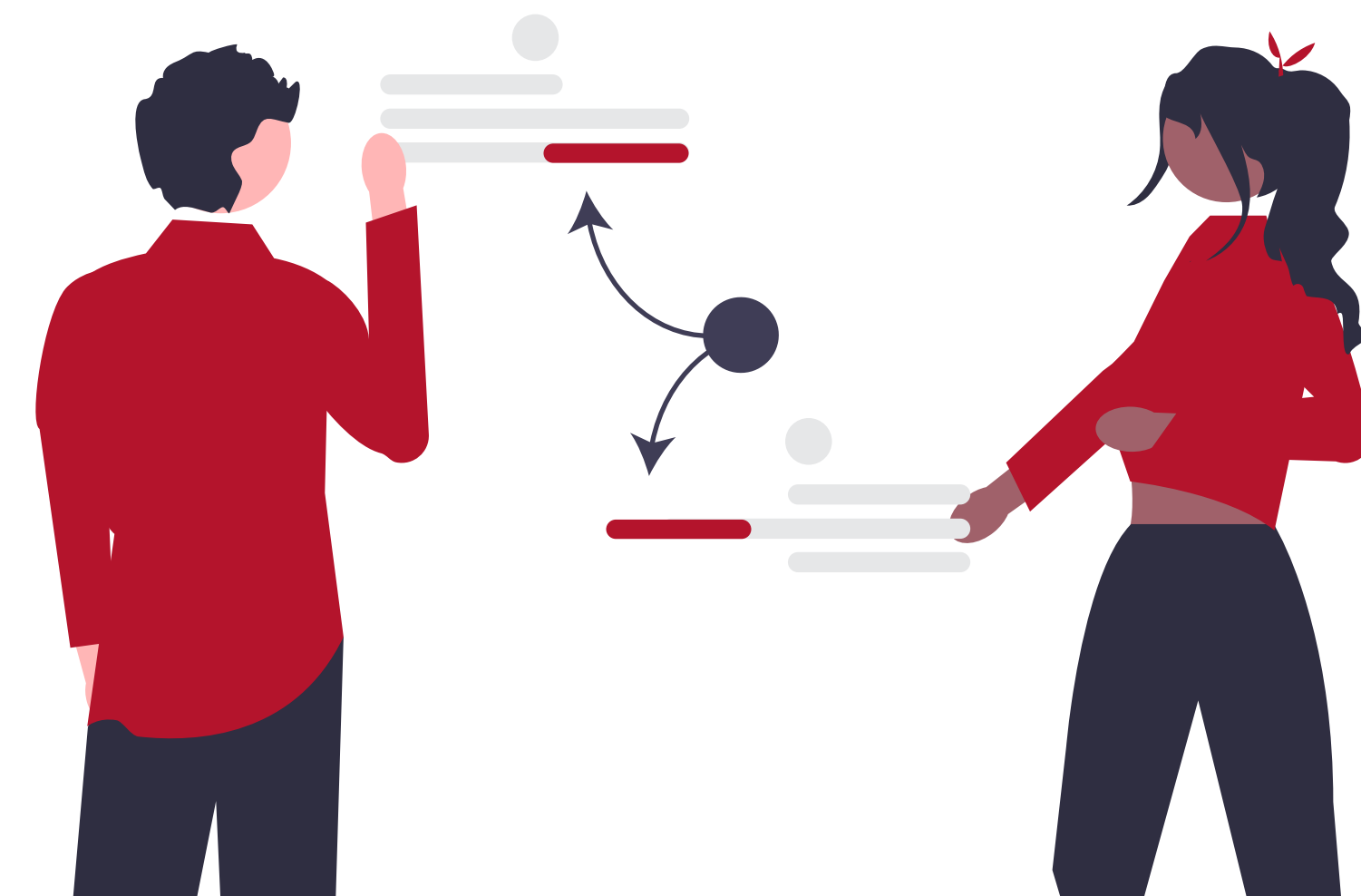
Possible Futures & Personas

- Scenario Development
- Personas
- Pains and Gains

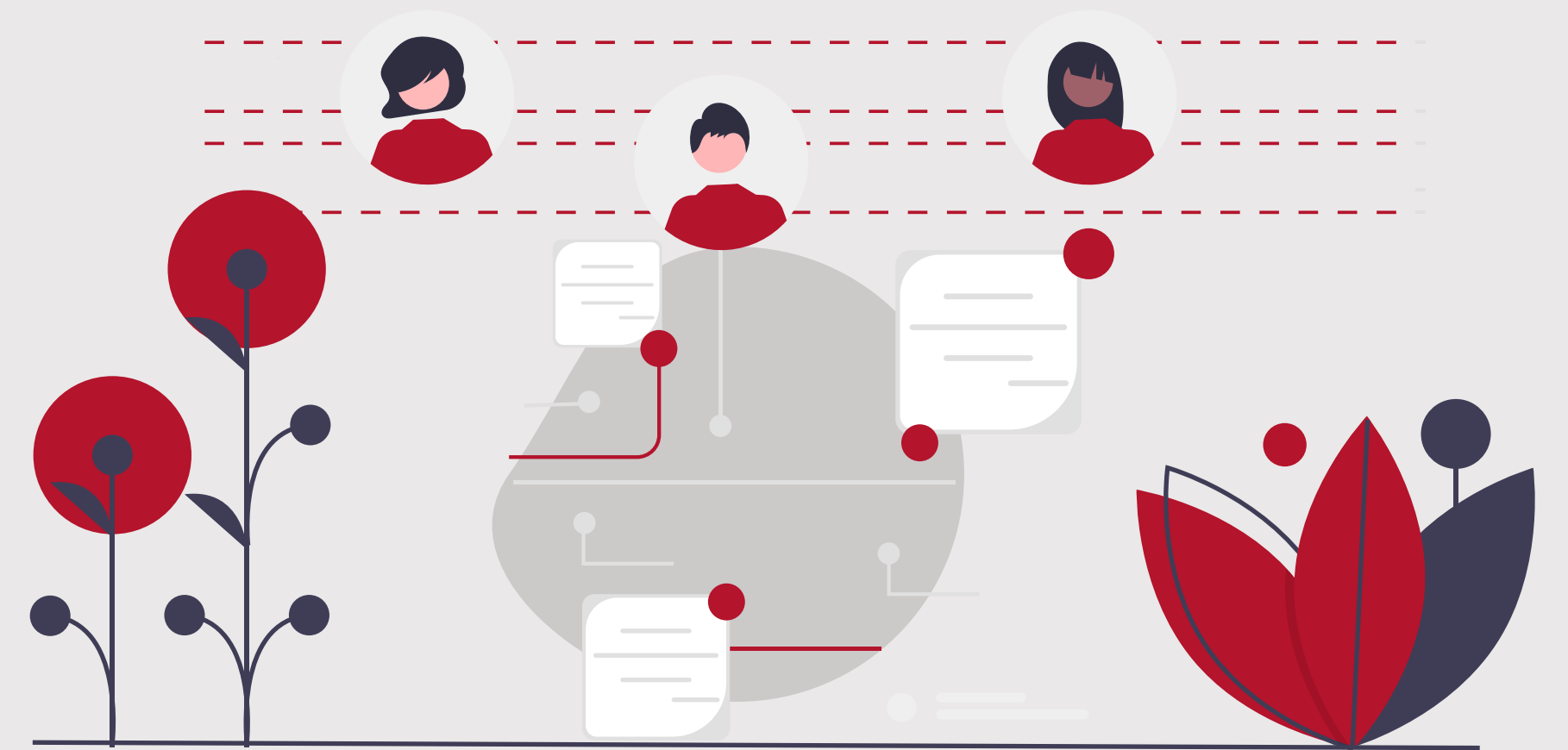
Opportunities

- Opportunities per Persona
- Harms Mitigated

Conclusion



How might we use **financial literacy, ethically and inclusively,** to minimize **unintended consequences** in the **shifting financial landscape?**



How might we use **financial literacy, ethically and inclusively**, to minimize **unintended consequences** in the **shifting financial landscape**?



Financial Literacy

Enabling and empowering people and institutions to manage their financial resources and safely navigate the increasingly digitized financial landscape.

Ethically & Inclusively

Consideration of the potential impacts facing people, society, and the planet and encourages sustainable and equitable growth, factoring in diverse perspectives.

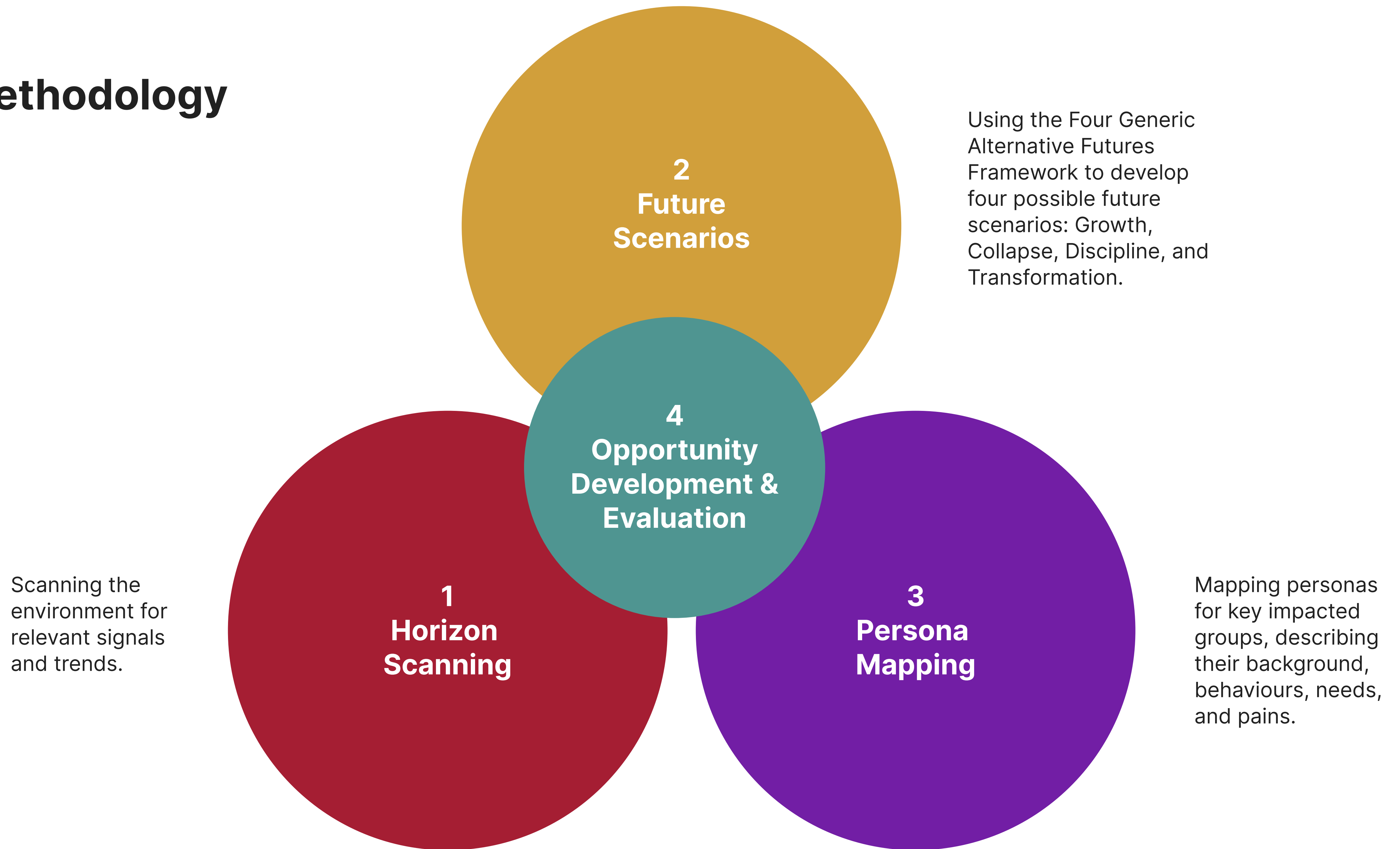
Unintended Consequences

Research of known concerns, gaps, and trends aids in the anticipation of potentially harmful consequences, mitigating risks for safer, healthier outcomes for all actors.

Shifting financial landscape

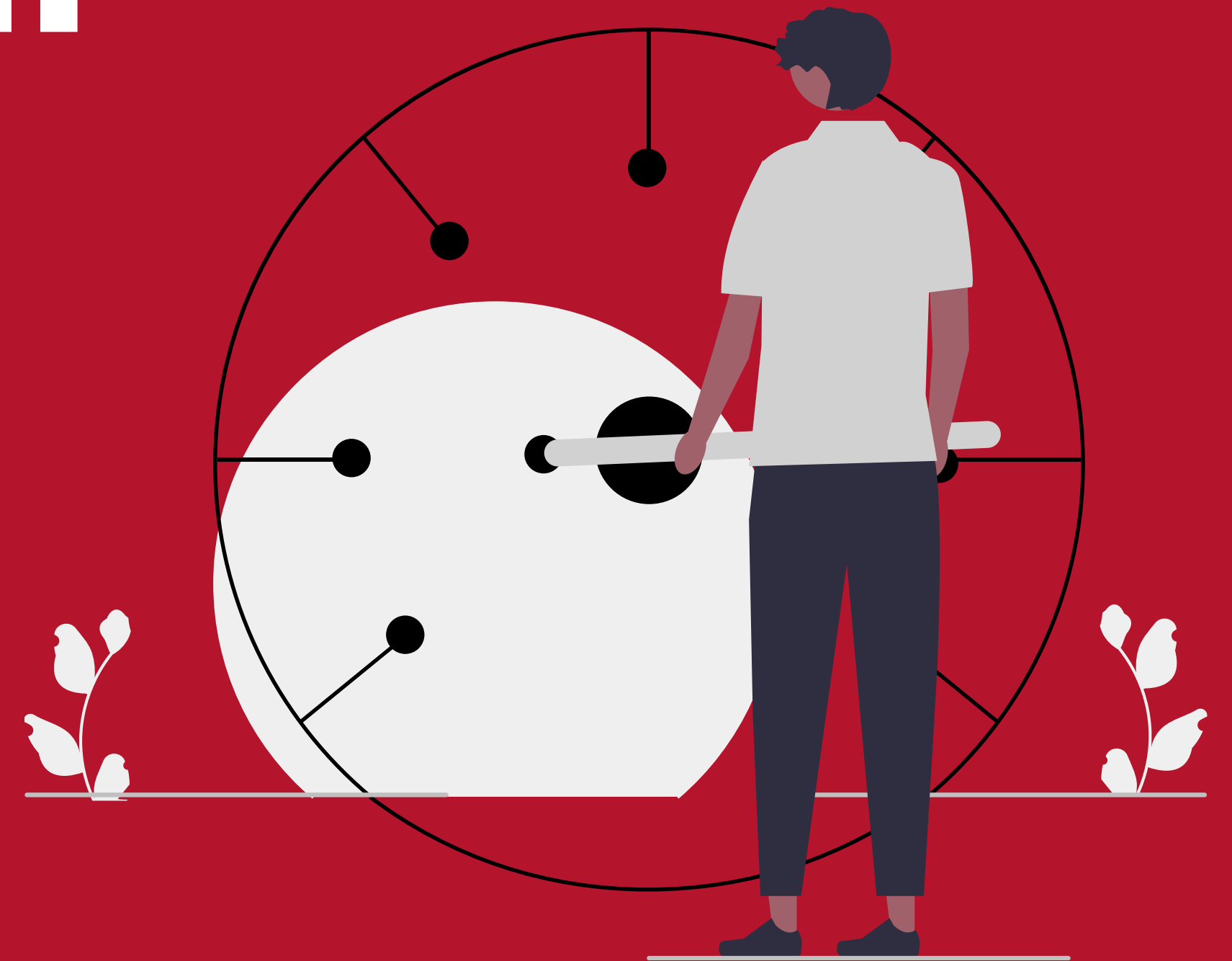
The rise of Fintechs, decentralised finance, green banking, etc. are forcing financial institutions to keep up with changing consumer needs and expectations.

Methodology

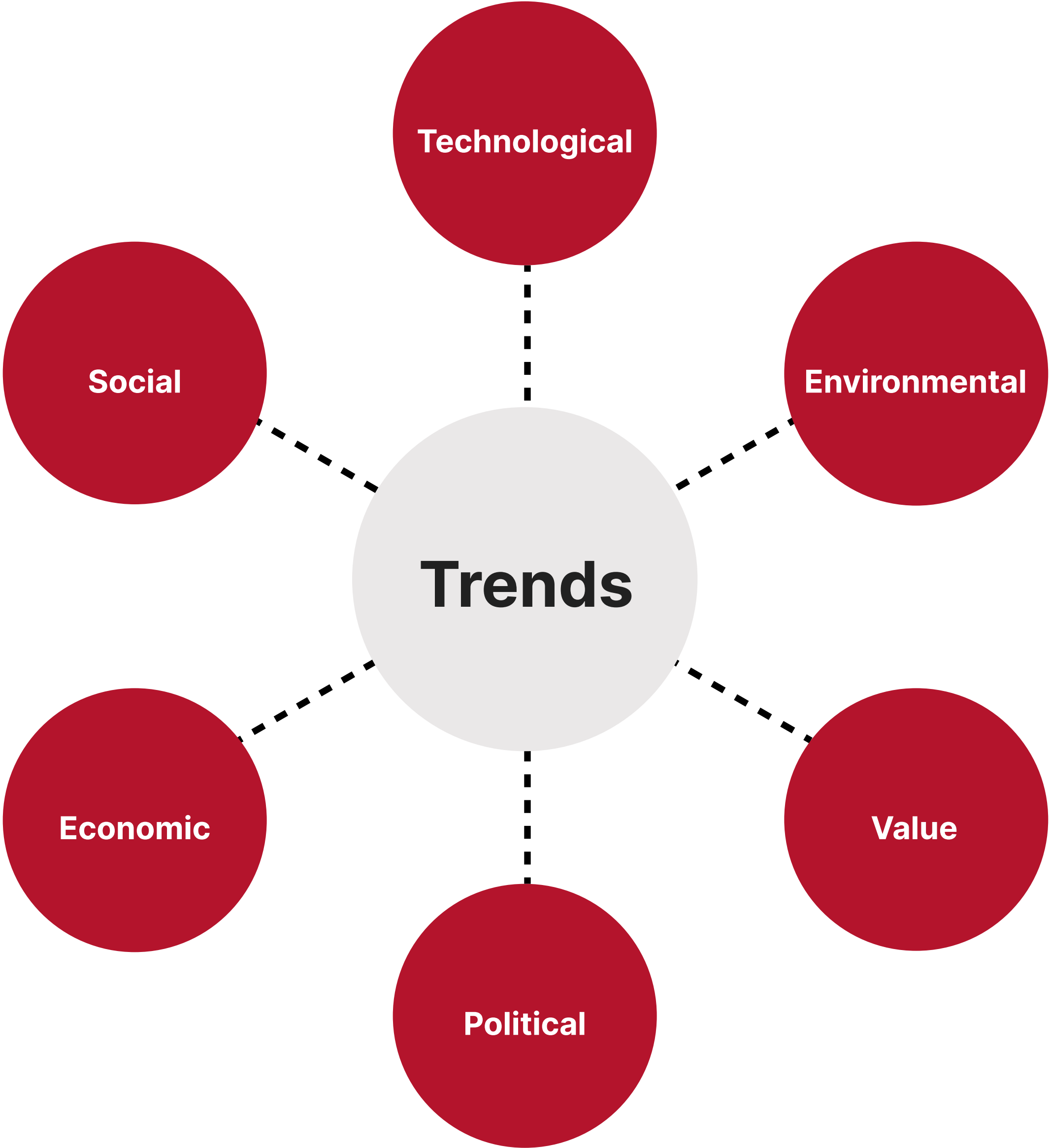


Shifting Financial Landscape

Identifying Effects on Traditional Banks



STEEP V



Signals

Social



Silver Tsunami

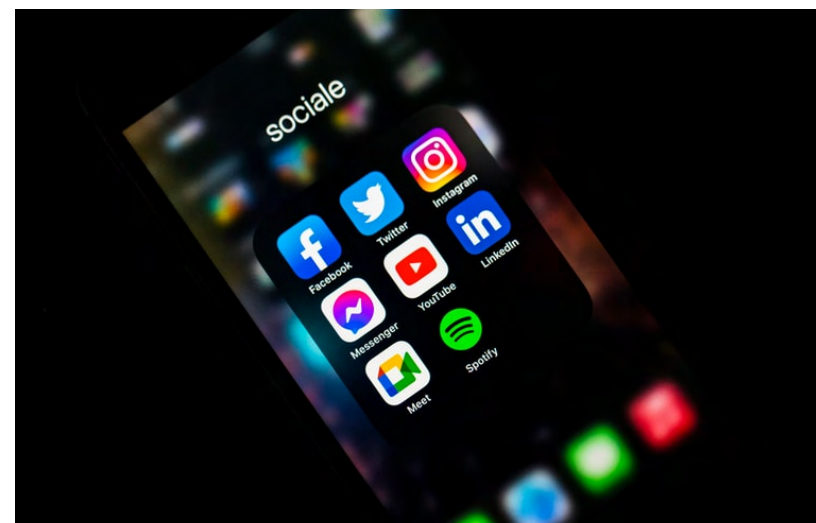


“Move Fast, Break Things” Pushback



Social Justice Goes Digital

Technology



Fifth Power



Hyper-Personalization



Digital Detox

Environmental



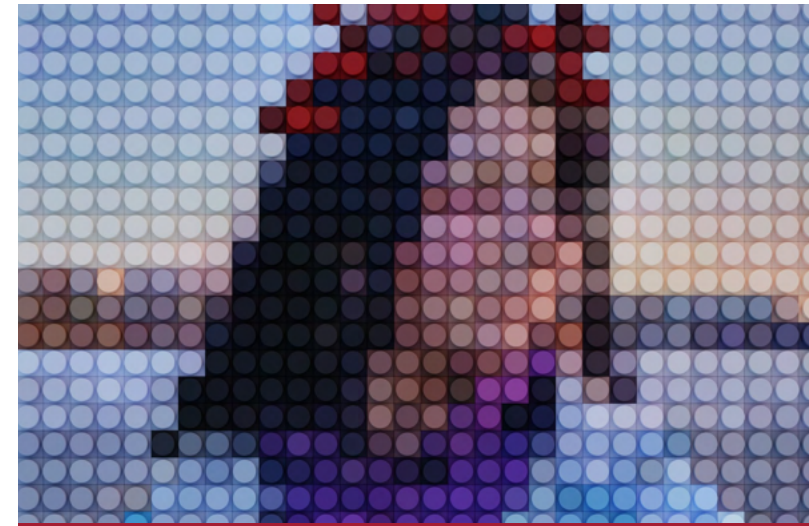
Data & Energy Consumption

Signals

Economy

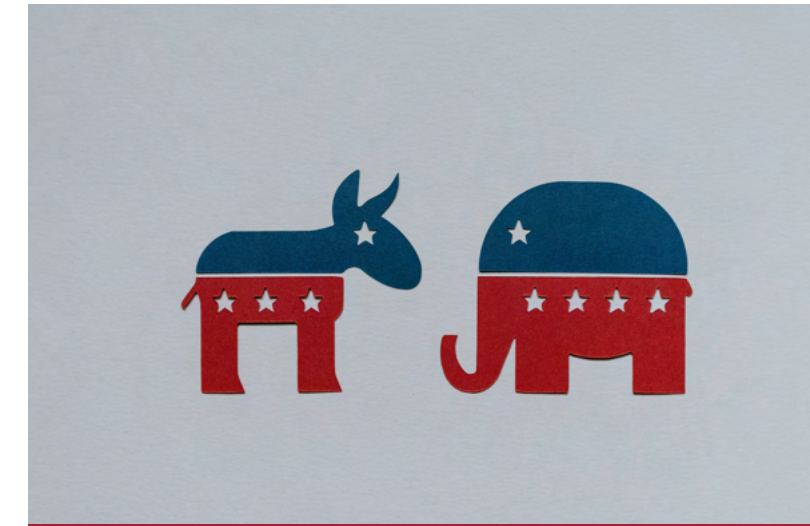


Meta-Economics & Decentralization



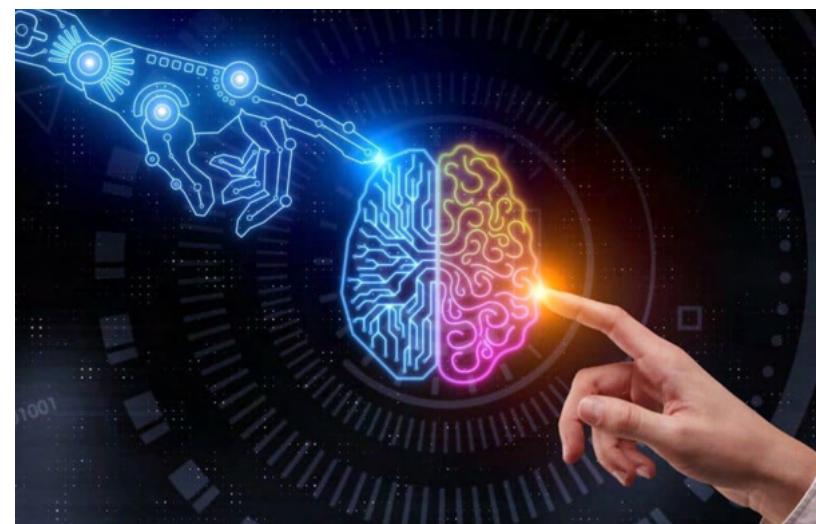
Digital Identity as Currency

Politics



Growing Political Polarization

Value



AI & Algorithmic Determinism

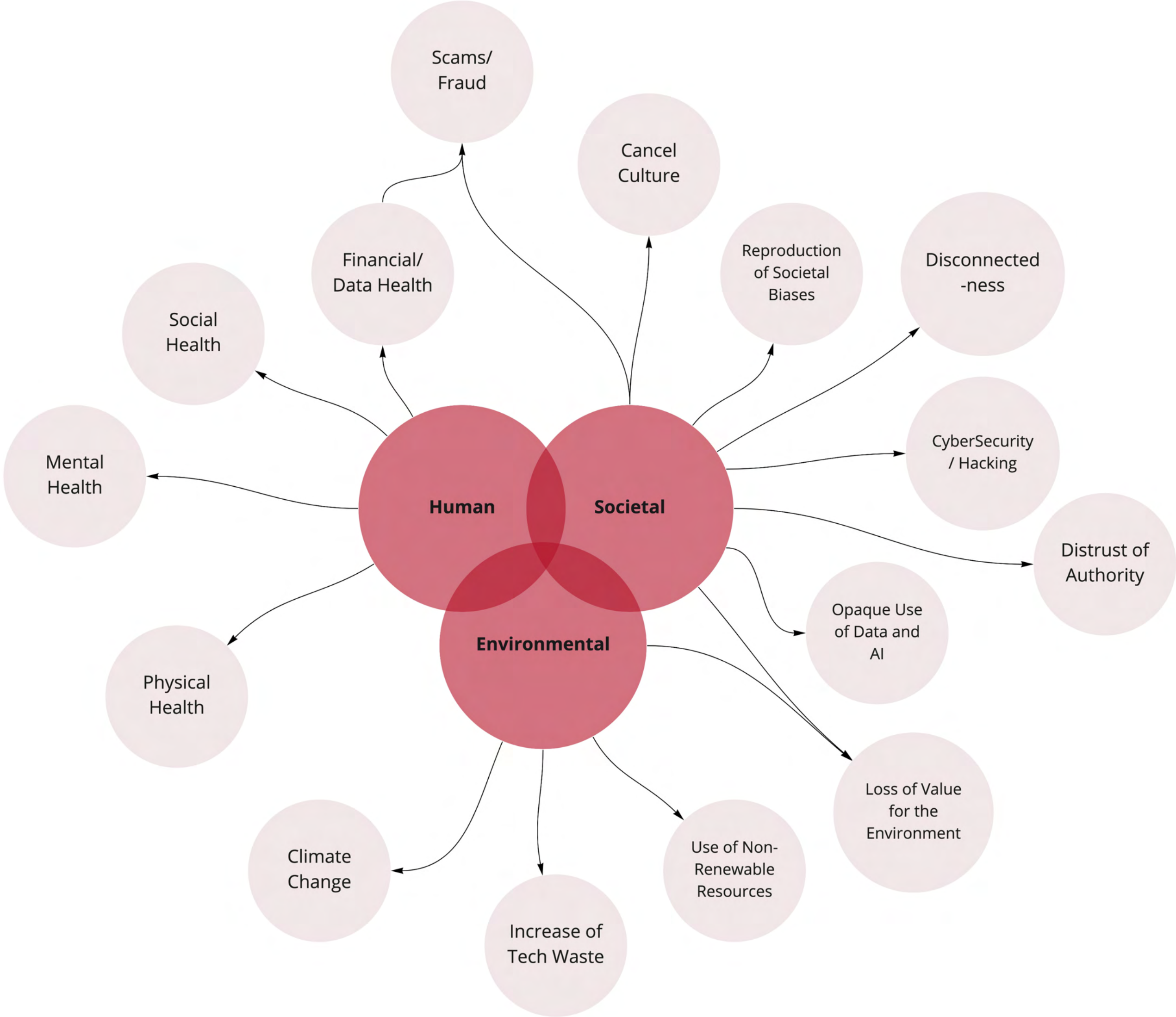


Growing Gig Economy

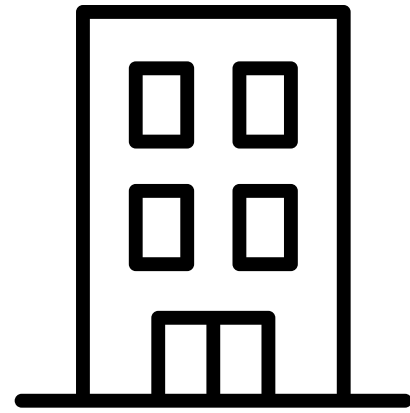


Financial Independence, Retire Early - FIRE

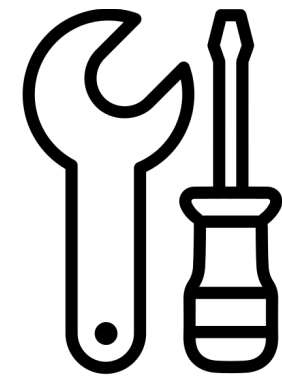
Distilling Harms



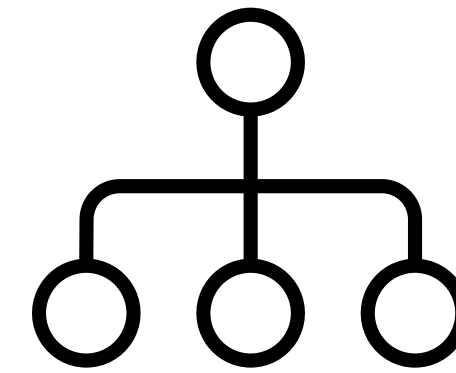
Thematic Harms of Technology



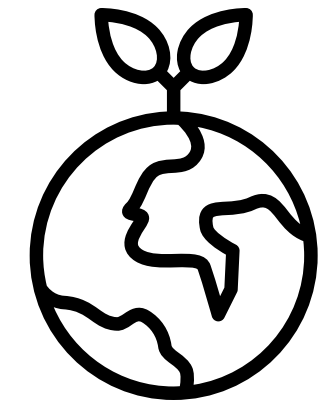
**Distrust of Media,
Government, & Corporations**



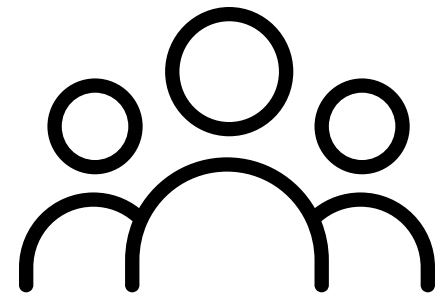
**Limited Tech Regulation,
Increasing Frauds & Scams**



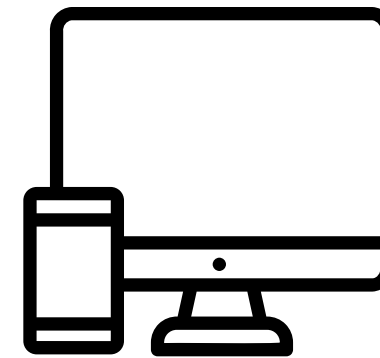
**Centralized Data Ownership
and Misuse by Big Tech**



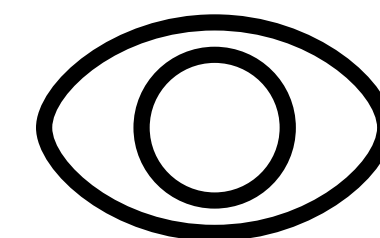
**Deterioration of
the Environment**



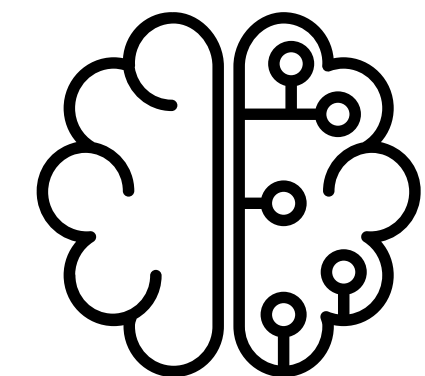
**Homogeneous Tech Culture
& Lack of Consideration for
Vulnerable Communities**



**Lack of Access to Tech
Literacy & the Digital
Divide**



**Lack of Transparency &
Accountability in Data
Use**



**Bias in AI & Machine
Learning**

Threats

Driving Innovation: Fintechs/ Digital-only banks
Financial Players: Big Tech
Commoditization of Banking
Political Polarization

Customer Engagement: Data Transparency
Expansion: Open Banking
Peer to Peer Technologies
Climate pattern disruptions



Opportunities

New Product Opportunities: Finance
Positive Brand Image: Sustainability
Increased: Digital Services

Collaborations: Partnerships
Systems and Services: Automation
Customized Services: Hyper Personalization

Possible Futures

Scenario Development



Four Alternative Futures Framework

Growth

The systems and ways of being we live inside continue to develop along their current trajectory.

Collapse

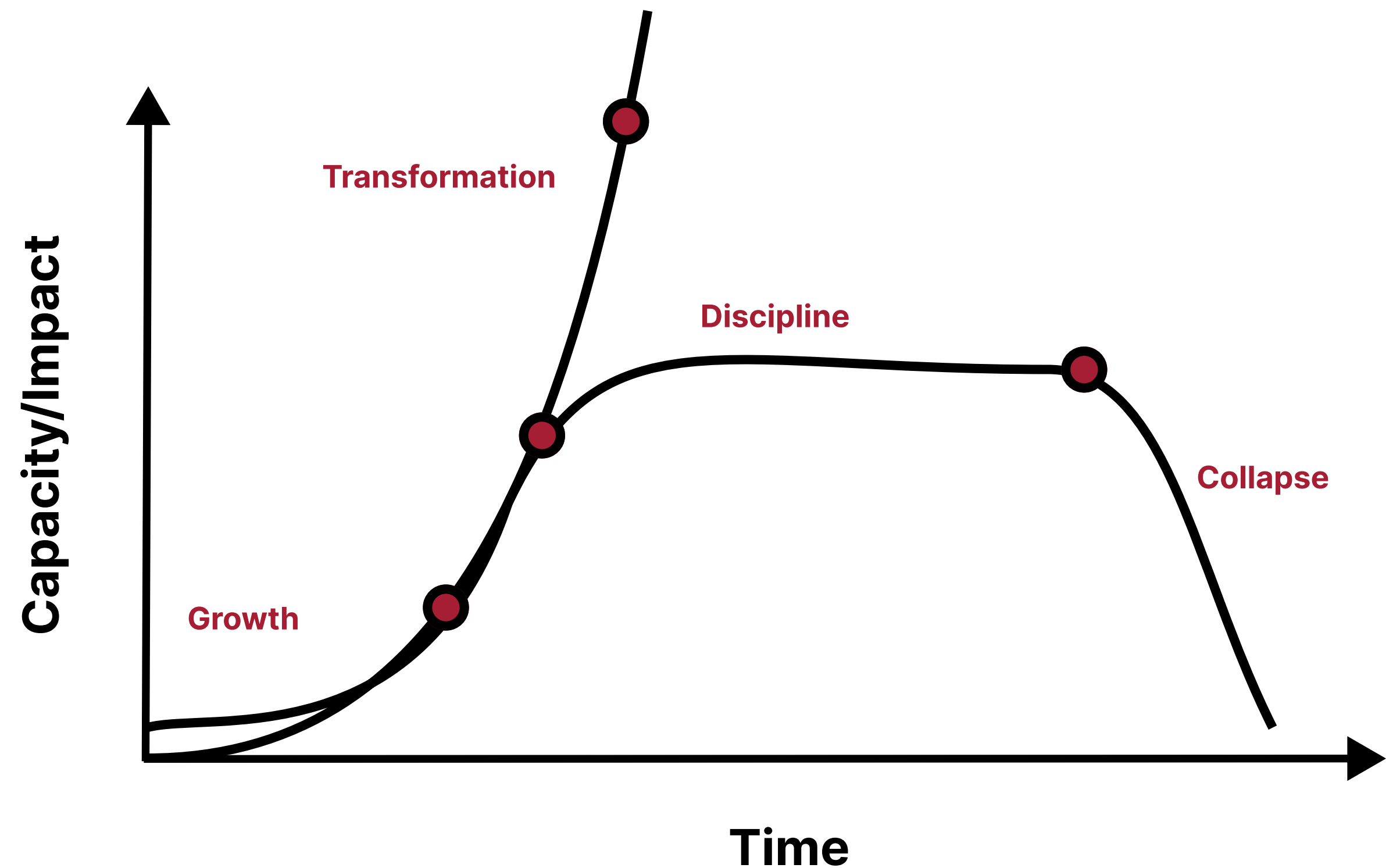
Our current trajectory comes to a sudden halt. Our systems and ways of being fall apart.

Discipline

New forms of restraint and control are imposed on the present order to prevent collapse.

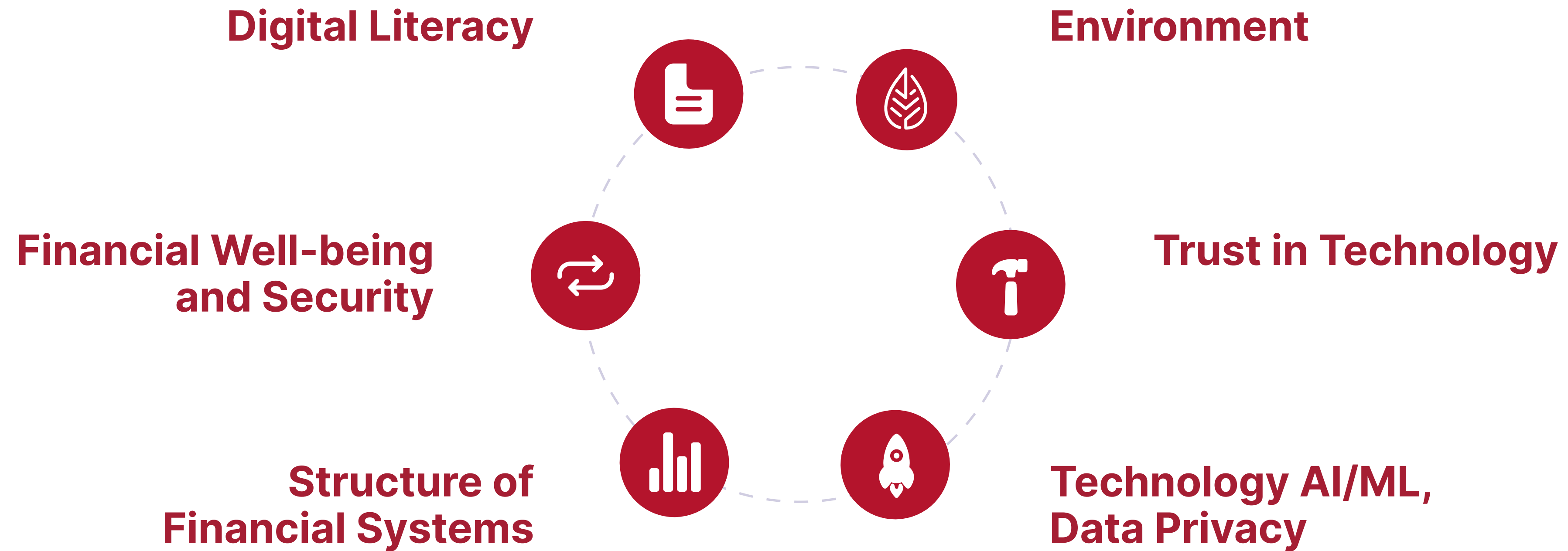
Transformation

Entirely new systems and ways of being are found; we transcend the present order.



Source: Dator's Four Futures Growth- Based Alternative Scenarios (GBAS)

Key Forces



Growth — Freedom Pursuit

Related Trends:

- Data & Energy Consumption
- Hyper Personalization
- Growing Gig Economy
- Fifth Power
- Fire Movement

In 2032, navigating daily activities has become easier and faster because of the widespread integration of advanced AI and other new technologies in multiple essential services. The expectation is that new technologies and services are flexible and customizable, to meet each individual's unique needs.

In this scenario, most Canadians have the financial knowledge to manage their personal finances, achieve their goals, and are confident taking charge of their investing. Most are actively engaged in the gig economy to some degree, as well as creative in finding innovative ways of investing to help them achieve their short and long term financial goals. Digital infrastructure is expanding across Canada, yet the progress is impeded by frequent extreme weather events as well as lengthy policy approvals. Thus, the digital divide persists especially within low-income households and marginalized groups, preventing them from accessing opportunities that can help them achieve financial stability.



Collapse — Buy N' Large

Related Trends:

- (Driver) Fifth Power
- Data & Energy Consumption
- “Move Fast, Break Things” Pushback
- Hyper Personalization
- Political Polarization on the Rise

The increasing impacts of changing weather patterns and extreme weather events are disrupting and distracting public life. Infrastructure initiatives and social justice movements are sidelined by an increasingly polarized and anxious public, widening the digital divide.

Trust in government has declined opening the door for big tech corps, particularly FAMGA, to increasingly expand its portfolios into new sectors. They leverage their wealth and tech expertise to create hyper-personalized experiences and services consumers expect, powered by AI and data. Banks, foreseeing declining market shares from competition in the commoditization of banking, pivot to focus more on B2B services and data exchange while still offering traditional banking products to older generations who are still more comfortable with a traditional bank.



Discipline — Big Surveillance: Power Switch

Related Trends:

- Data & Energy Consumption
- Digital Identity as Currency
- Fifth Power
- “Move Fast, Break Things” Pushback
- Political Polarization on the Rise
- Social Justice Goes Digital

Current digital technologies will have exposed new vulnerabilities in society and our ways of life. Unchecked algorithms trained on biased data will reinforce societal stereotypes, making destructive decisions that affect billions of people. Data is a hyper-valuable commodity in both commercial and political spheres making society and individuals vulnerable to data breaches.

Repeated data breaches in the public and private sector have left Canadians increasingly pessimistic that personal data collected by these entities is secure. Public outrage over the breaches fuels anger at the government for not putting more stringent policies in place, prompting calls for more strict regulations. This public outcry prompts questions about regulating big tech and what should be subject to regulation. Should this be an antitrust conversation? Should the government limit Big Tech to ensure it contributes to the overall national development goals—ensuring data security and a broader push to address inequality? Or should the government partner with Big Tech so it works as an extension of the government, aiding economic and geopolitical growth?



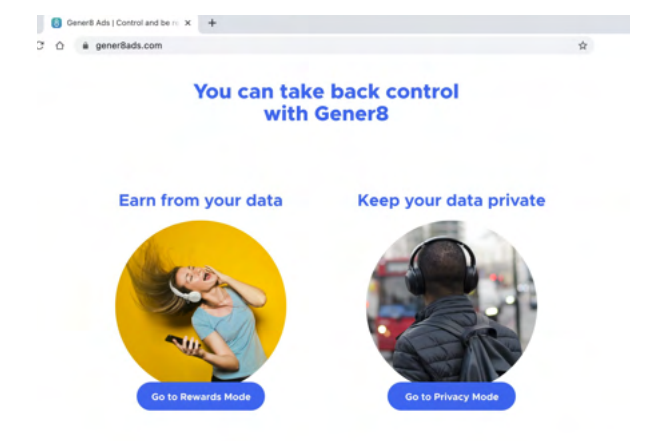
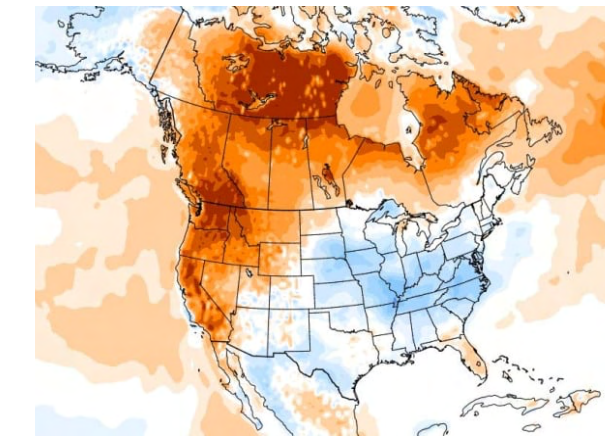
Transformation — The Global Google Crash

Related Trends:

- Data & Energy Consumption
- Digital Identity as Currency
- “Move Fast, Break Things” Pushback
- Meta-Economics & Decentralization
- Fifth Power
- Digital Detox

Climate change has continued to advance without the necessary interventions, causing catastrophic heat waves. Rapid and dramatic increases in temperatures leads to wildfires and causes infrastructure to melt. This includes the Google Cloud servers whose parts fry and cause an abrupt shutdown of Google systems.

With more than half the workforce working remotely or in digital spaces, millions lose access to key services —their browsers, google accounts and emails—and are unable to work. Nor can many access online payments or verify accounts connected to Google. Unable to predict the length of the shutdown people panic and move to alternate service providers to minimize the work and business disruption. This fuels a rapid adoption of decentralized systems which are less vulnerable to single-point failures. The downside is they still consume a considerable amount of energy and require constant cooling which contributes to decline of environmental health. An additional side effect is the inability for governments and businesses to access decades worth of data which leads to the rise of the Universal Basic Data Income (UBDI).

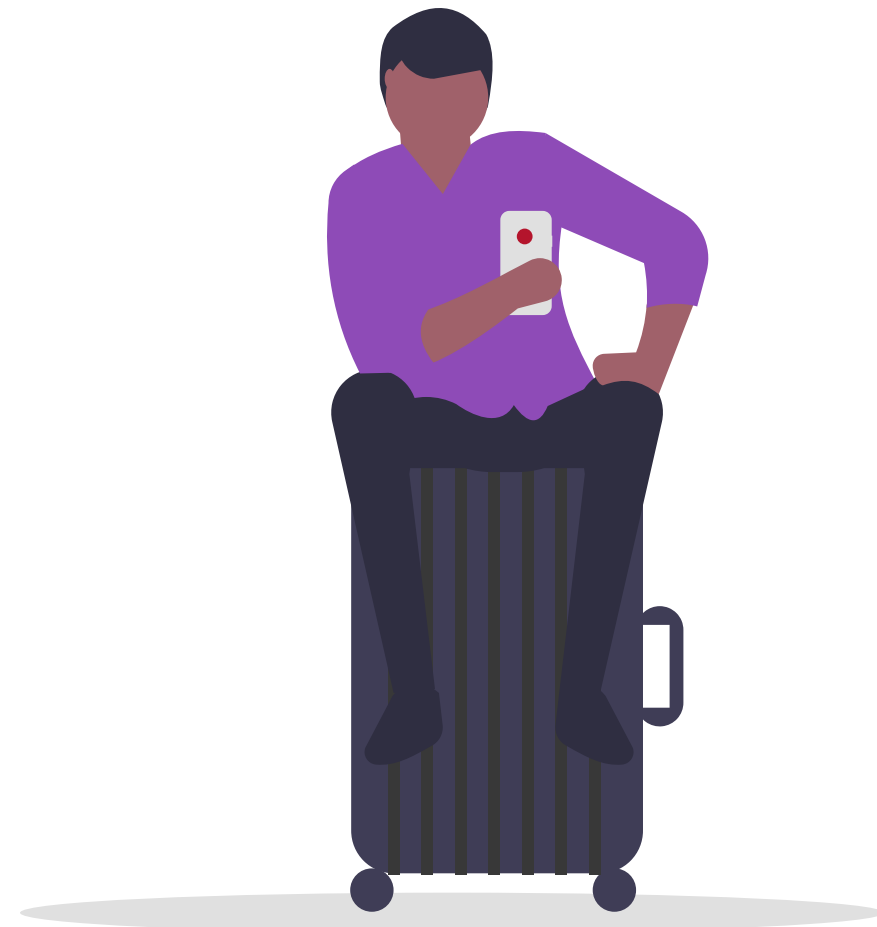


Personas

Navigating User Pains & Gains



Key Impacted Groups

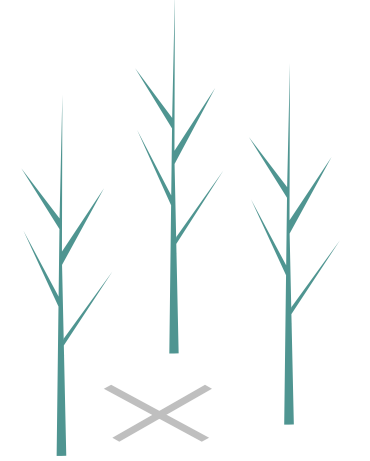


Low/No Credit
Immigrants



Indigenous
Entrepreneurs

The Environment



HNI Entrepreneurs



Indigenous Entrepreneur



Sharon Wenowa

Age : 26

Background: Two-Spirit, First Nations

Occupation: Visual Artist & Gamer Designer

- **Roles:** Entrepreneur, employee
- **Values:** Indigenous representation in video game industry, self-determination, Indigenous Futurism, environment, community, LGBTQIA2S+ representation
- **Current Status:** Balancing between full-time job and spending time in the business, as well as seeking business planning/executing advice from indigenous/non-indigenous professionals who have succeeded in a similar niche market
- **Financial Needs:** Start-up capital to cover initial game development cost (equipment, hiring animators, developer, sound, designer etc.)
- **Concerns:** Creating a game with high impact towards Indigenous communities while protecting the health of the planet
- **Long-term goals:** Offer mentorship and scholarships to other Indigenous youth, particularly female and two-spirit and gender diverse, interested in creating Indigenous-led visions of the future through virtual worlds

Indigenous Entrepreneur

Collapse

Gains

- Businesses revolving around metaverse will find a good place in the FAMGA dominated market
- Indigenous markets as one of the few sectors that sees growth in blockchain technologies in order to secure indigenous knowledge; protecting data sovereignty
- Although slow, Community on reserve have secured access to internet

Pains

- Prolonged development of inclusive indigenous services
- B2C businesses receiving less support as banks shift focus to B2B
- Not benefited by hyper-personalization due to lack of indigenous data
- Debates about continuing in this business as it may contribute to environmental harm

Growth

Discipline

Transformation

HNI Entrepreneur



Nora Pearson

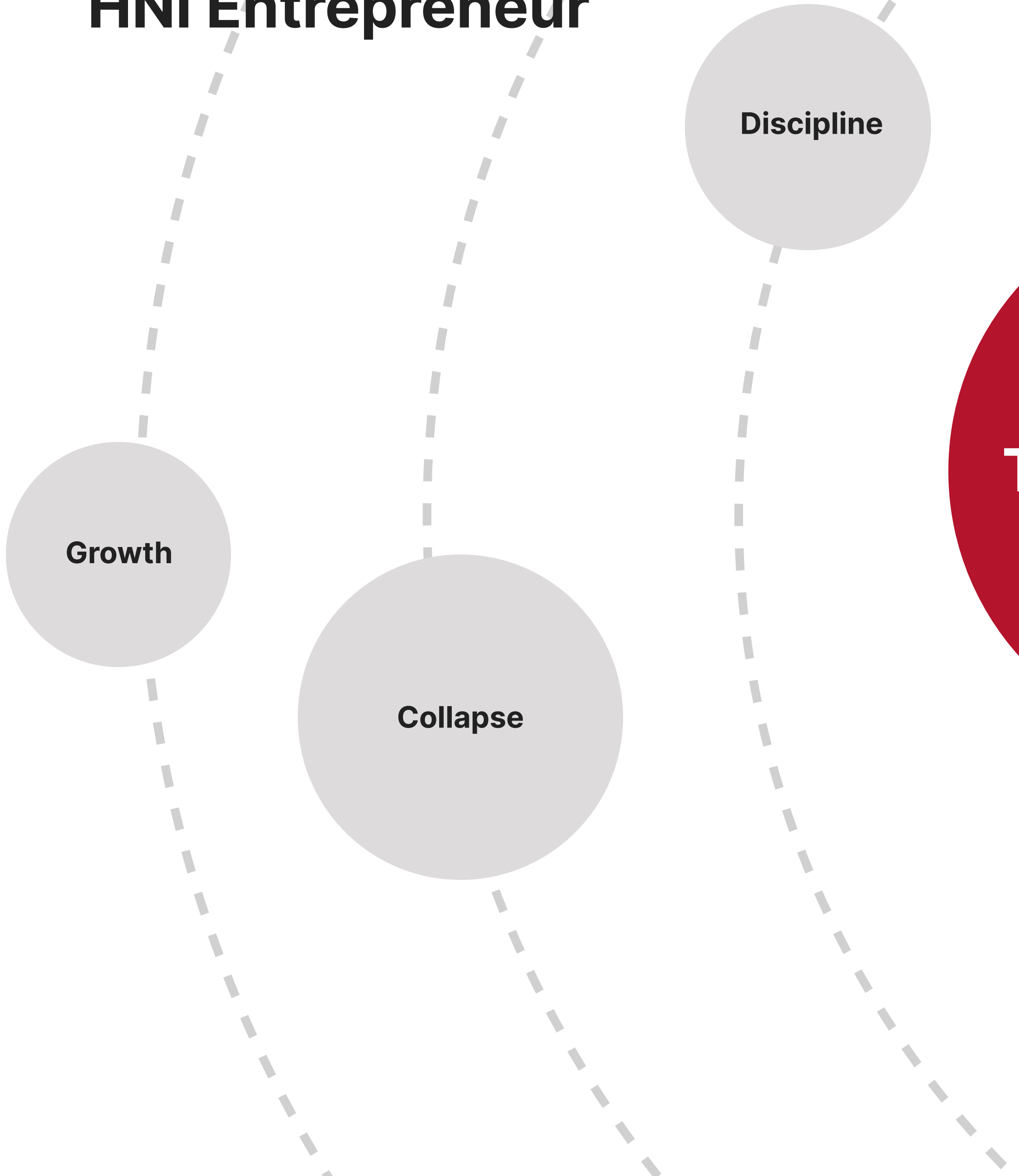
Age : 56

Background: Mixed French-Caribbean

Occupation: Digital Entrepreneur and Angel Investor

- **Roles:** Businesswoman, wife and grandmother
- **Values:** Work-life balance, environment (carbon neutrality), volunteers at safe drinking water initiatives
- **Current Status:** Semi-retiring, owns 4 E-commerce businesses, an academy and consultancy firm. Invests in multiple properties, start-ups and businesses that promote regenerative designs and aim for carbon neutrality. Travels south during winters for 5 months of the year due to climate disruptions.
- **Financial Needs:** A sustainable income source that can sustain her retirement with her spouse
- **Concerns:** Climate disruptions, grandchildren not having healthy physical social interactions skills
- **Long term goals:** Retirement, spend quality time with husband and family

HNI Entrepreneur



Gains

- Pushed to adapt fast to new technologies and systems
- High social credibility hence access to emergency resources and funding and high valued UBDI (Universal Basic Data Income)
- More time to spend with family and re-evaluate her businesses or even retire

Pains

- Sudden disruption of multiple of her businesses simultaneously
- Major loss in income and investment returns
- Grandchildren unable to access the virtual Google university and education is halted
- Heightened levels of anxiety, stress

Low/No Credit Immigrant



Name: Ved Iyer

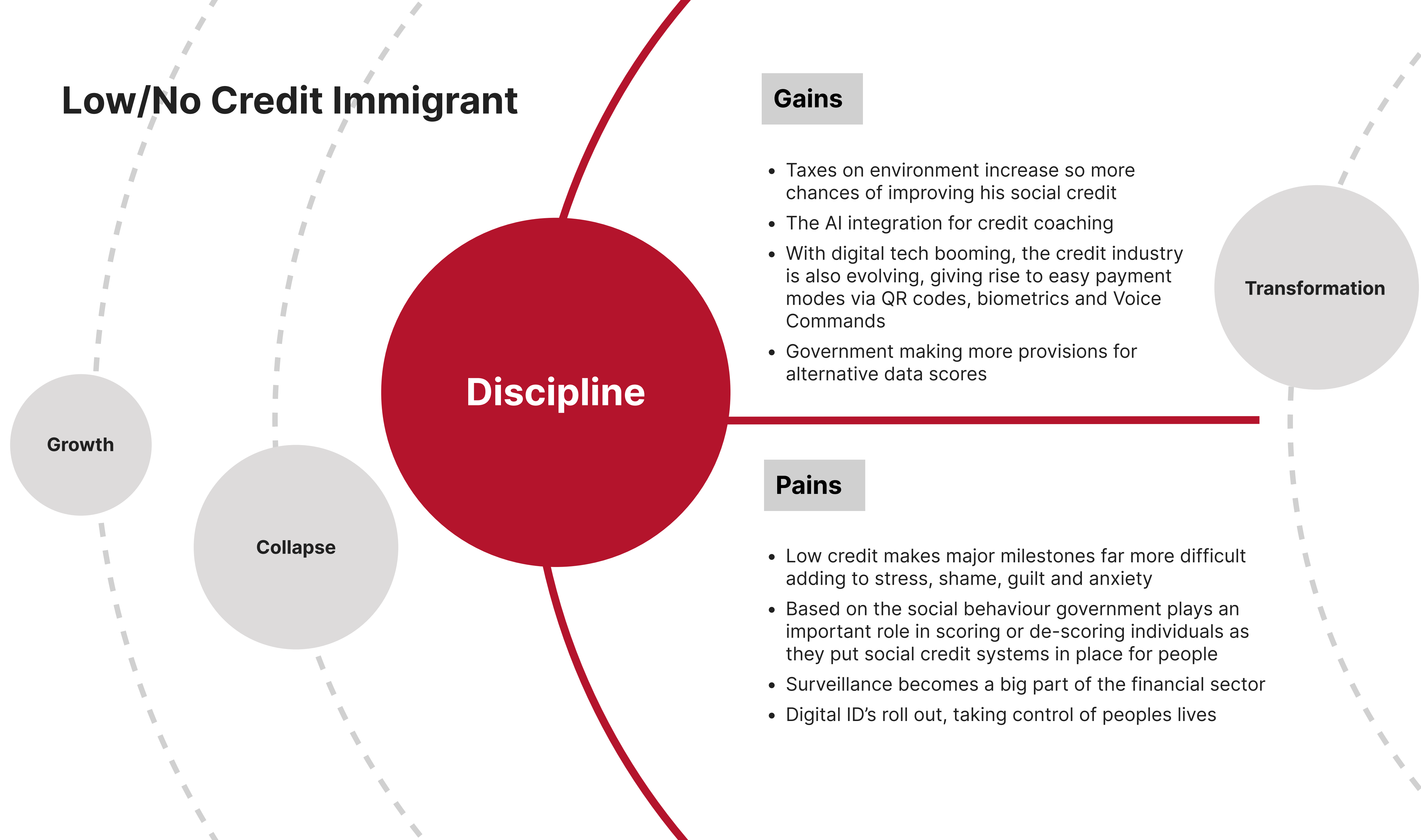
Age : 35

Background: New Immigrant from India

Occupation: Geological Engineer working as a Mining Supervisor with the Government of Yukon

- **Roles:** Immigrant, husband, supports his family back in his home country
- **Values:** Family oriented, conscious of his savings
- **Current Status:** Working as a Mining Supervisor with the Government of Yukon, adjusting to the Canadian culture, economy and climatic conditions
- **Financial Needs:** Access to credit, open a line of credit to finance daily needs, access to an account that allows credit, savings, and no-fee international money transfer
- **Concerns:** No locally recognized credit history and limited acceptance of alternative forms of identification
- **Long-term Goals:** To gain knowledge in the Canadian financial system, to add convenience to his life like the Buy Now Pay Later service options, to leverage credit repair services so he can dispute inaccurate information

Low/No Credit Immigrant



Discipline

Gains

- Taxes on environment increase so more chances of improving his social credit
- The AI integration for credit coaching
- With digital tech booming, the credit industry is also evolving, giving rise to easy payment modes via QR codes, biometrics and Voice Commands
- Government making more provisions for alternative data scores

Pains

- Low credit makes major milestones far more difficult adding to stress, shame, guilt and anxiety
- Based on the social behaviour government plays an important role in scoring or de-scoring individuals as they put social credit systems in place for people
- Surveillance becomes a big part of the financial sector
- Digital ID's roll out, taking control of peoples lives

Growth

Collapse

Transformation

The Environment



Earth

Age: 4.5 billion years

Background: Third planet from the sun

Occupation: Home to diverse biotic and abiotic life

- **Roles:** Home for and nurturer of diverse lifeforms, resource provider
- **Values:** Balance, cooperation, time to regenerate
- **Needs:** Time to regenerate its resources and biodiversity, reduce pollution, humans to be accountable for their actions and work together to solve the climate crises
- **Concerns:** Ongoing human-led extraction, harvesting, and interference in the planet's natural resources as well as pollution are disrupting the balance of its systems. Increasingly damaging human infrastructure—transportation routes, telecommunications, and entire communities
- **Current Status:** Responding to the cumulative effects of human-led activities through extreme heat waves, droughts, floods, wildfires, storms, changing weather patterns
- **Long-term Goals:** Rebalancing its ecosystems, replenishing its resources, sustainable and equitable use of its resources by all life including humans

The Environment

Collapse

Gains

- To feel respected and valued
- Needs time to replenish renewable resources and rebalance ecosystems
- Balance
- Wishes humans understood its message
- Needs help to get rid of pollutants

Pains

- Feeling exploited / used
- Frustrated that it's not being heard or respected
- Frustrated by the imbalance and damage done to its ecosystems and the plant and animal life
- Tired of feeling sick
- Worried about the future of the different life dependent on healthy ecosystems

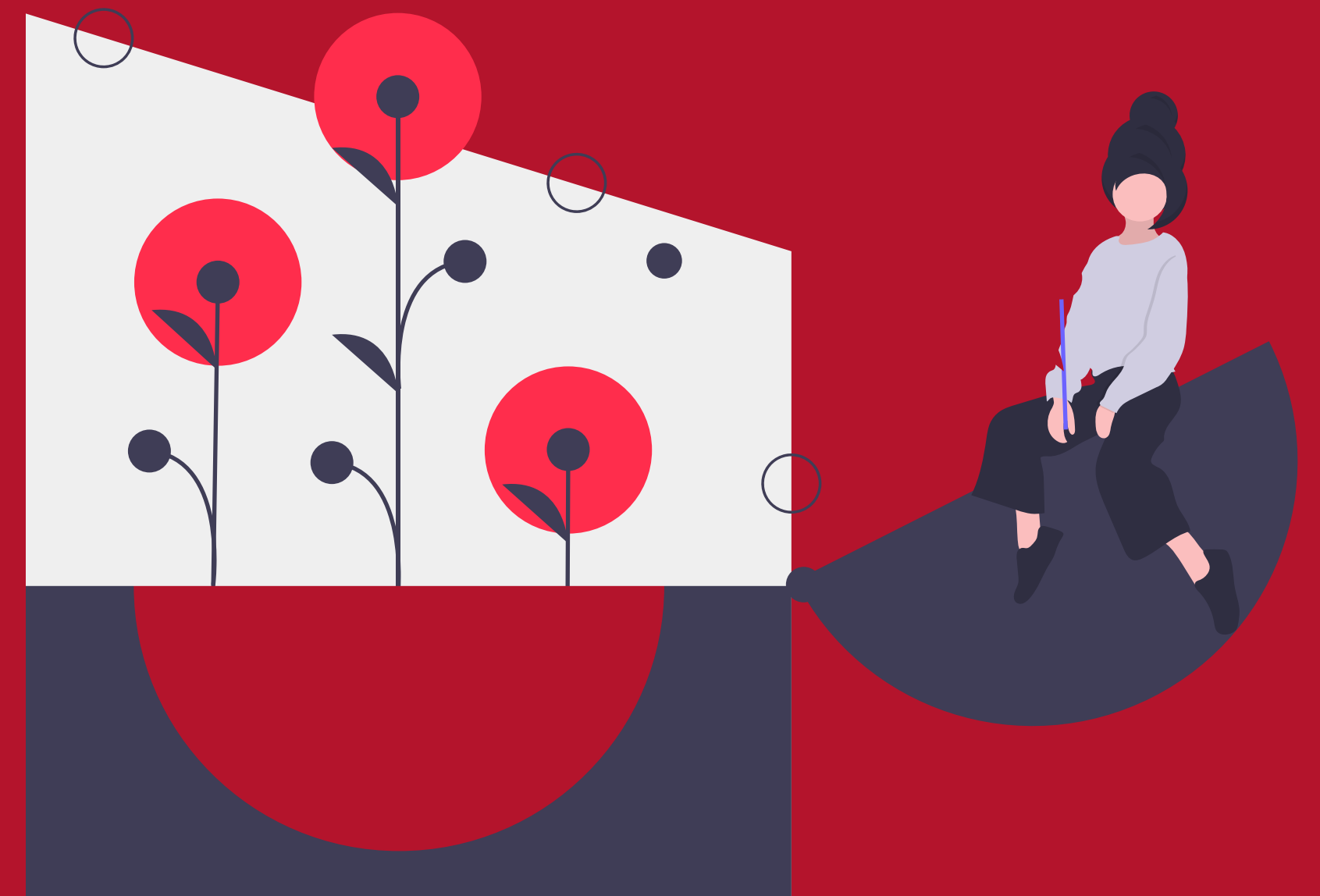
Discipline

Transformation

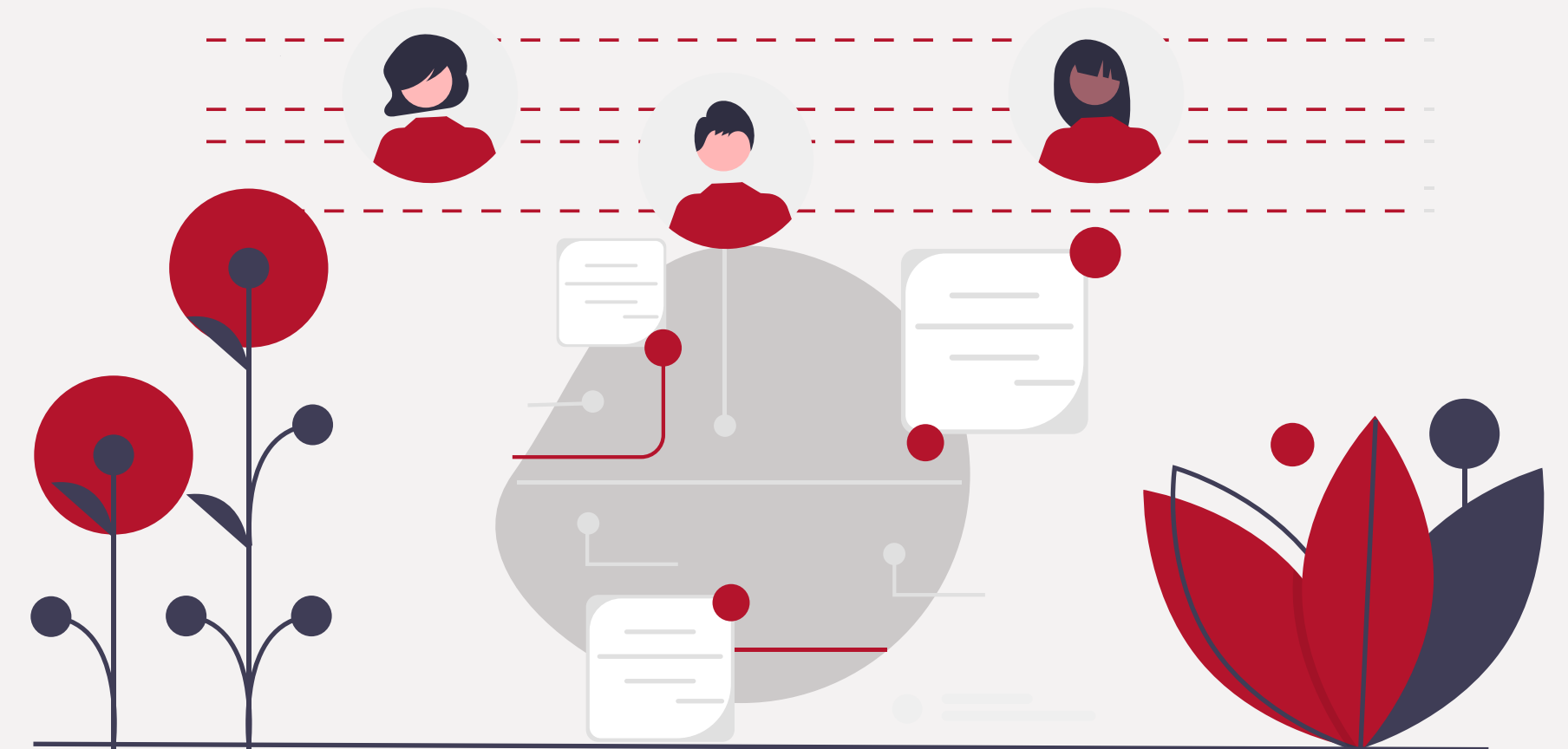
Growth

Opportunities

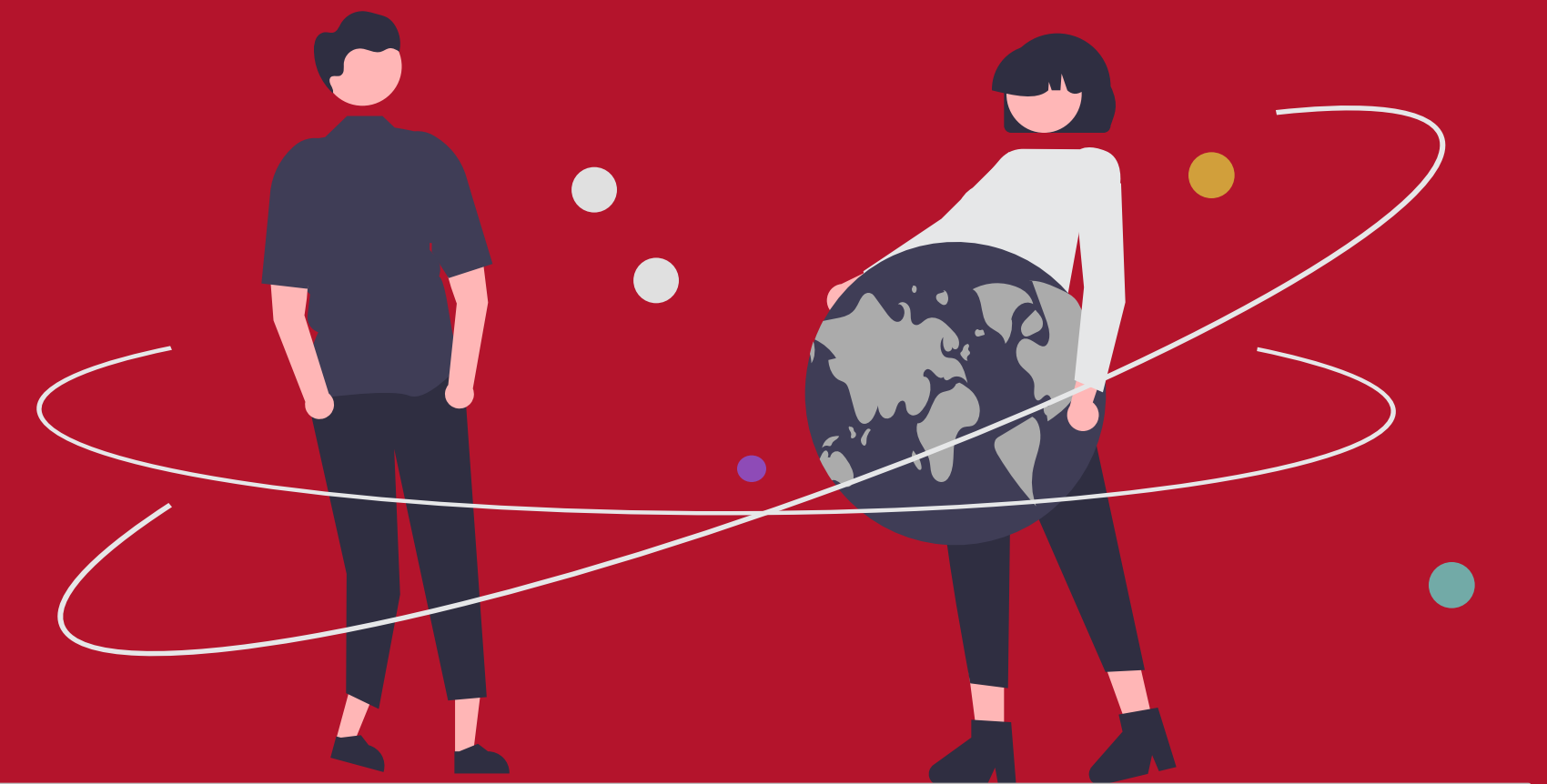
Giving Customers a New Experience



How might we use **financial literacy, ethically and inclusively,** to minimize **unintended consequences** in the **shifting financial landscape?**



To adapt and build **an understanding of technology**, which allows Scotiabank **to mitigate harms and build deeper connections** between individuals, society, and the planet.



How would you build healthier and safer experiences for individuals, society, and the planet?

Thank You

Citations

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