

MASTERING BIG DATA AND SYSTEMS THINKING

*How to build a new company
based on systems data
(45 Mins). Dr G.*



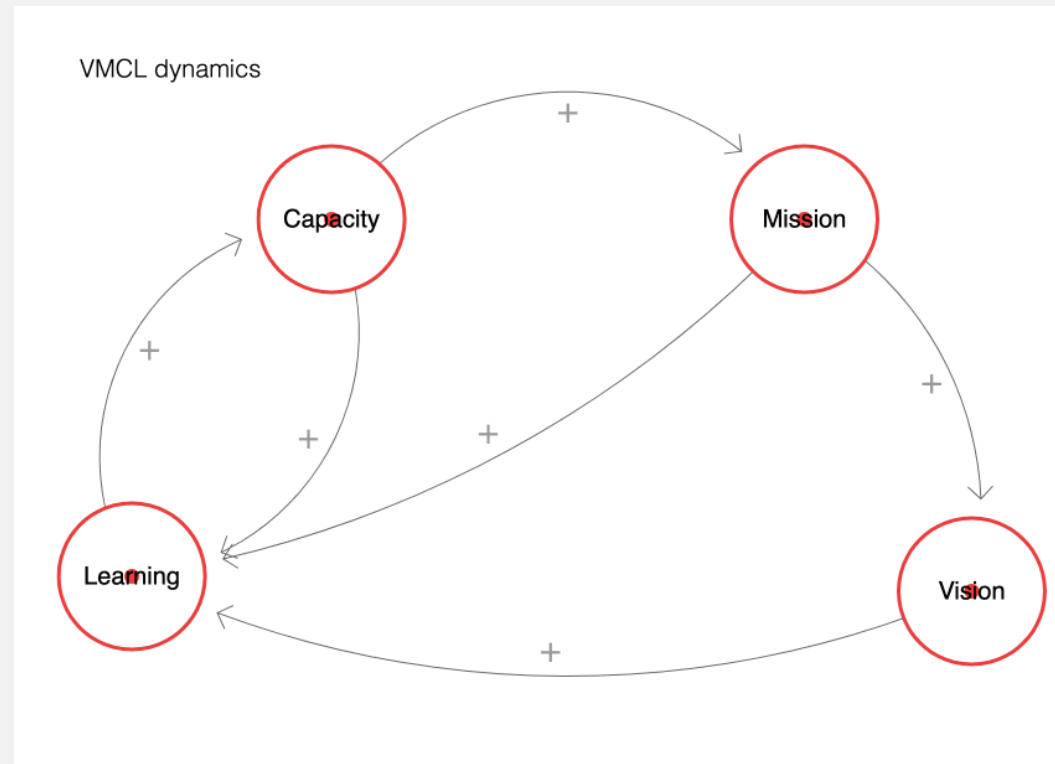
WHY CAN'T WE THINK DIFFERENTLY?

Remember Steve Jobs? Bill Gates on Banking?



Think different.

IF COVID DIDN'T WAKE YOU UP TO SYSTEMS THINKING, NOTHING WILL!



VUCA

Volatile Uncertain
Complex Ambiguous

LAMO

Linear Anthropocentric
Mechanistic Ordered

VUCA World

The real world is nonlinear.

The real world is agnostic about human endeavors.

The real world is adaptive and organic.

The real world is networked and complex with a sprinkling of randomness...

LAMO Thinking

Yet, we think in linear ways...

Yet, we tend to look at things through a human-centered (anthropocentric) lens...

Yet, we tend to think mechanistically...
(e.g., the metaphors we use reference machines; universe is like a clockwork; mind is like a computer).

Yet, we think of things in ordered categories and hierarchies...

EVENTS

React

Systems Patterns

Predict

Systems Structures

Design

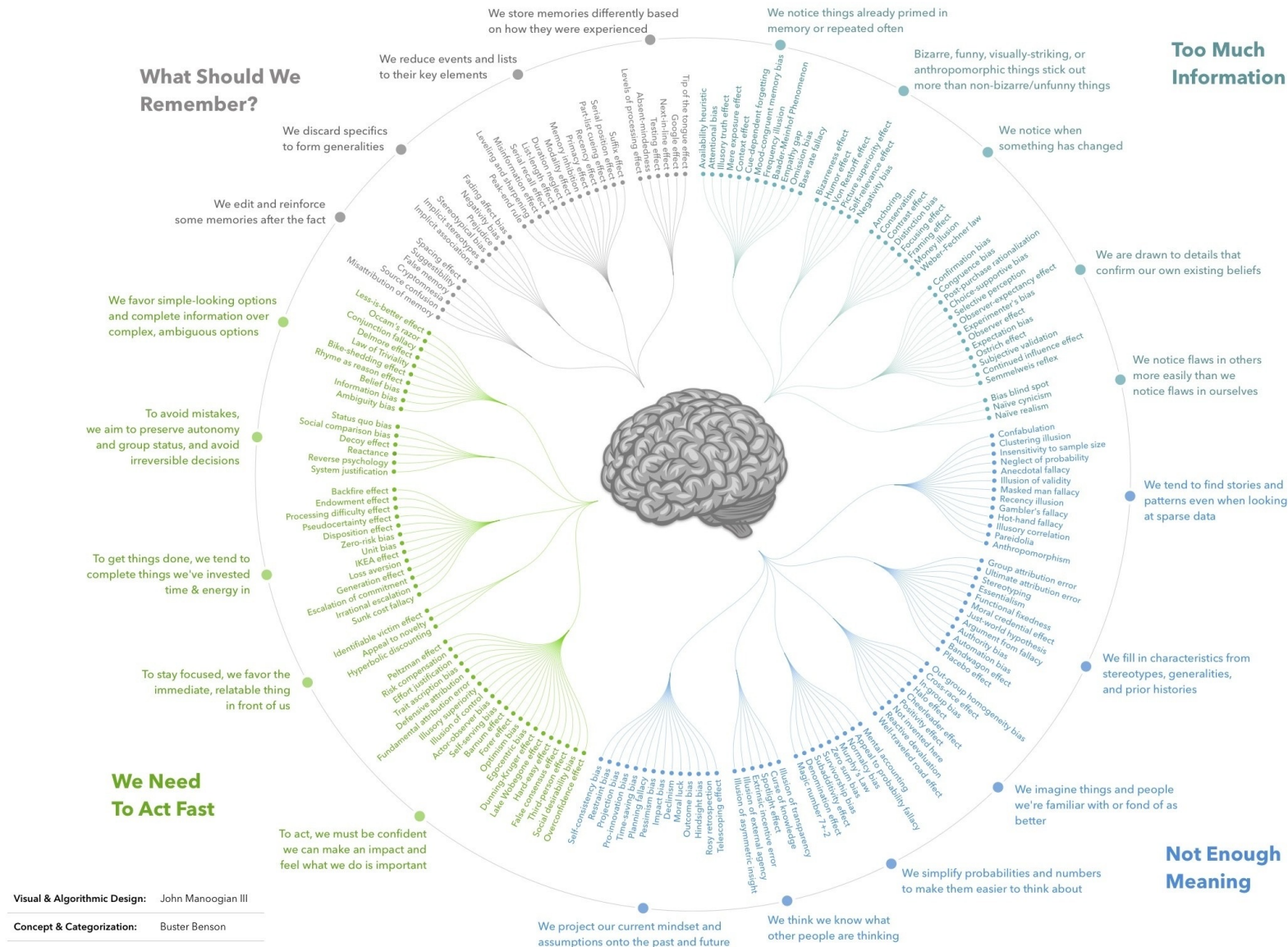
Mental Models

Reframe

AND WE ARE FULL
OF BIASES?

*Source: Cabrera
Research Lab, 2023*

COGNITIVE BIAS CODEX



designhacks.co

BEFORE AND AFTER COVID

The Old and the New Type of Organization

Pre 2020 Organisation

- **DATA are stuck within the silos of accounting, sales, IT, or operations.**
 - We forgot that the most important a business needs to do is to capture and own a customer.
 - Company has not been designed as a learning organization where decisions are actually made by every person at every level.
 - We make things difficult to listen to the wishes and wants of our customers.

Post - COVID

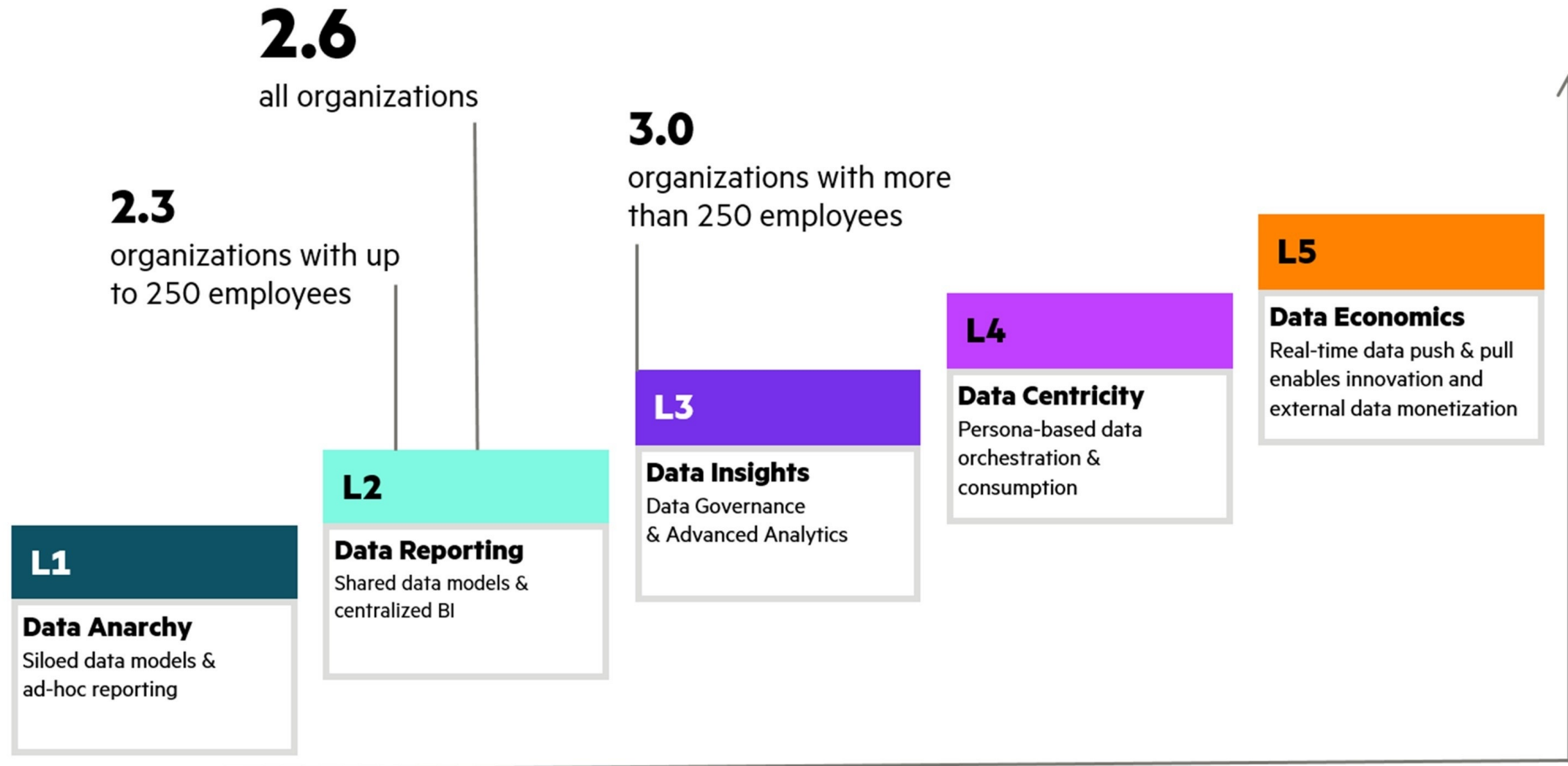
- **Accepting that the ecosystem is dynamic and that organizations must be open....**
 - Data is the new oil. How to monetize it?
 - The new organization must not be afraid of data and be very mindful of its characteristics.
 - Space data is plentiful, reliable, fast, huge, and inexpensive...if only we know how to leverage that. Space data can provide a competitive advantage.

SKYWATCH

- Data is the new oil. Space data is the new petrol.
- Those who understands the evolving and new data ecosystem is the new Spider in the next economy.
- NewSpace **is** the next economy.
- Space is for everybody!
- Is it for you? Do you understand how to use Space data?
- <https://www.youtube.com/watch?v=QzS2imIoWDY>

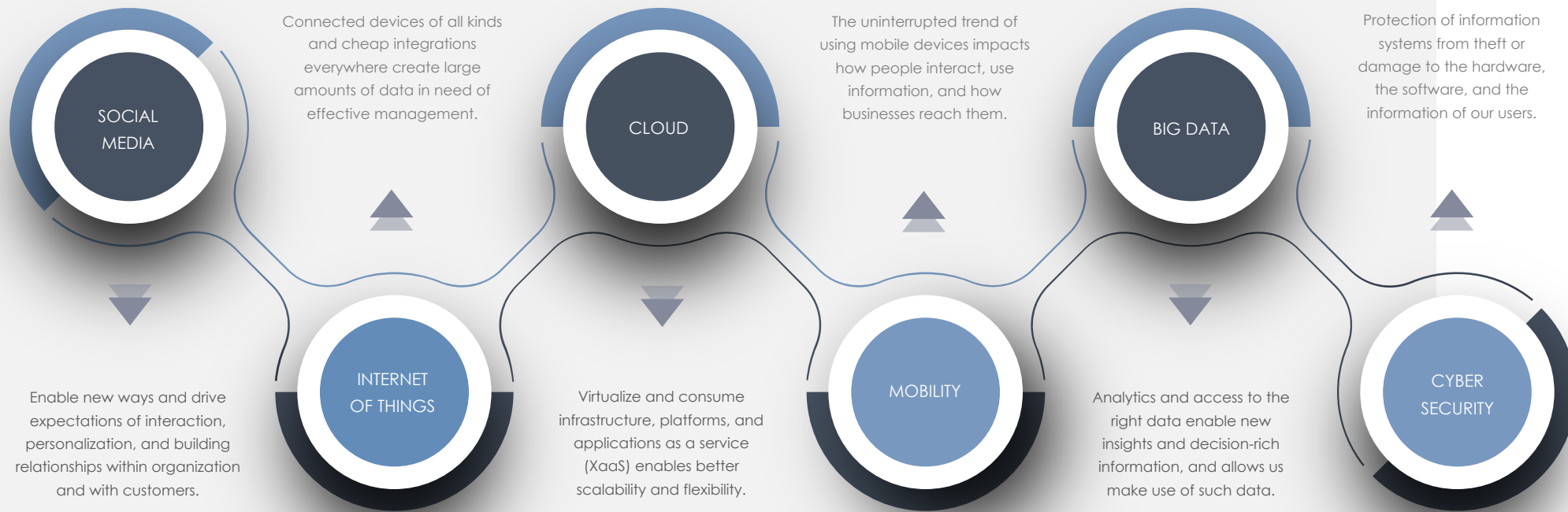


DATA CHARACTERISTICS



Source: HP 2020

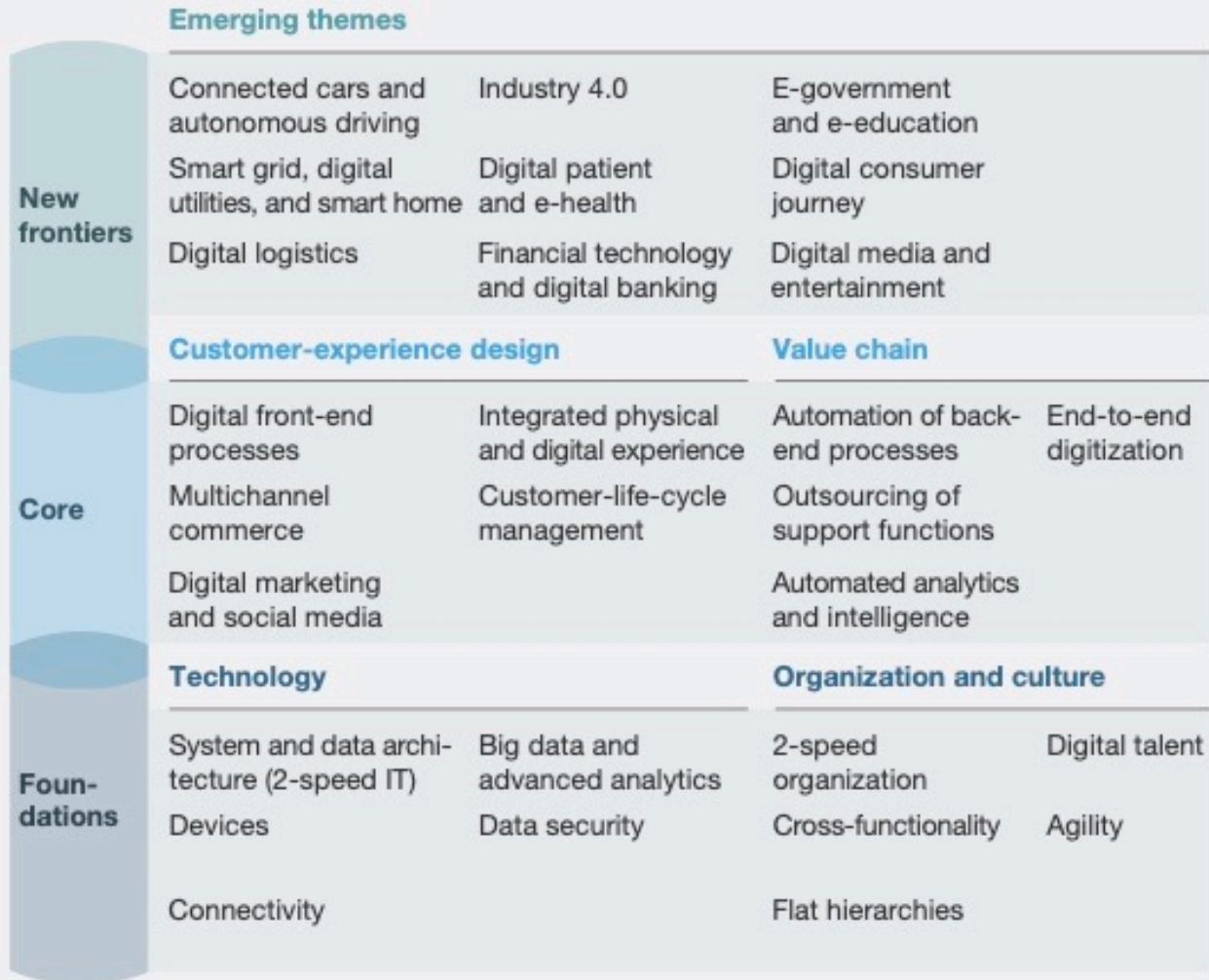
Emerging Technology Trends



Source: Your Exec 2022

Leaders must understand where digital is having the greatest impact.

Digital affects core businesses, opens new frontiers, and requires foundational change.



Companies that have digitally transformed achieve higher revenues and stronger profits than their peers

Digital transformation



Ability to track and measure every step of the value chain

- Evolving technology with greater ability to capture, store, transmit and analyse data
- Need to connect complex data and handle huge data volumes



Business strategy driven by data analytics

- Advanced analytics for uncovering patterns in data
- Programmable tools that track business performance at the lowest level of detail



New technology and capabilities are redefining the traditional value chain

- Manual processes are increasingly replaced with automation
- Fluid project teams, dynamic tools, agile project delivery, flexible business models
- New market entrants redefining the traditional value chain



Companies that have digitally transformed invested well in both technology-enabled initiatives and the leadership capabilities required for that profound change

Those companies that have digitally transformed are 26% more profitable than their average industry competitors

How should I build a company that can be founded on big data?

Exercise (15 minutes)

Go to your favorite Chat-GPT

ACCORDING TO SAGE (ON MORTGAGE LENDING)

1. Identify your target market. (First time home-buyers, people with average credit scores, etc). Then start thinking how big data can help.
2. Build the right team. People with expertise in big data. Data Scientist, Engineers, Analysts.
3. Define or refine your data strategy. What data you need to collect, how to store it, analyze it, process it? **Are the data relative statics or are they being updated daily, hourly?**
4. Start collecting the data, cleaning it, and preparing it for easy compilation and usage by different people. **Please don't confuse correlation with causation.**
5. Analyze the data using machine learning algorithms to seek new patterns and trends. Which are strongly linked or correlated to default rates. Train your machine.
6. Need some sort of data visualization tool. Communicate and share your learning.
7. Develop targeted lending strategies based on insights gained from your data analysis. For example, certain factors such as recency of payment history could be a better predictor of loan approval. Feed that into your underwriting or risk management model.
8. Monitor and refine. Go back to step 1.

DIGITAL TRANSFORMATION

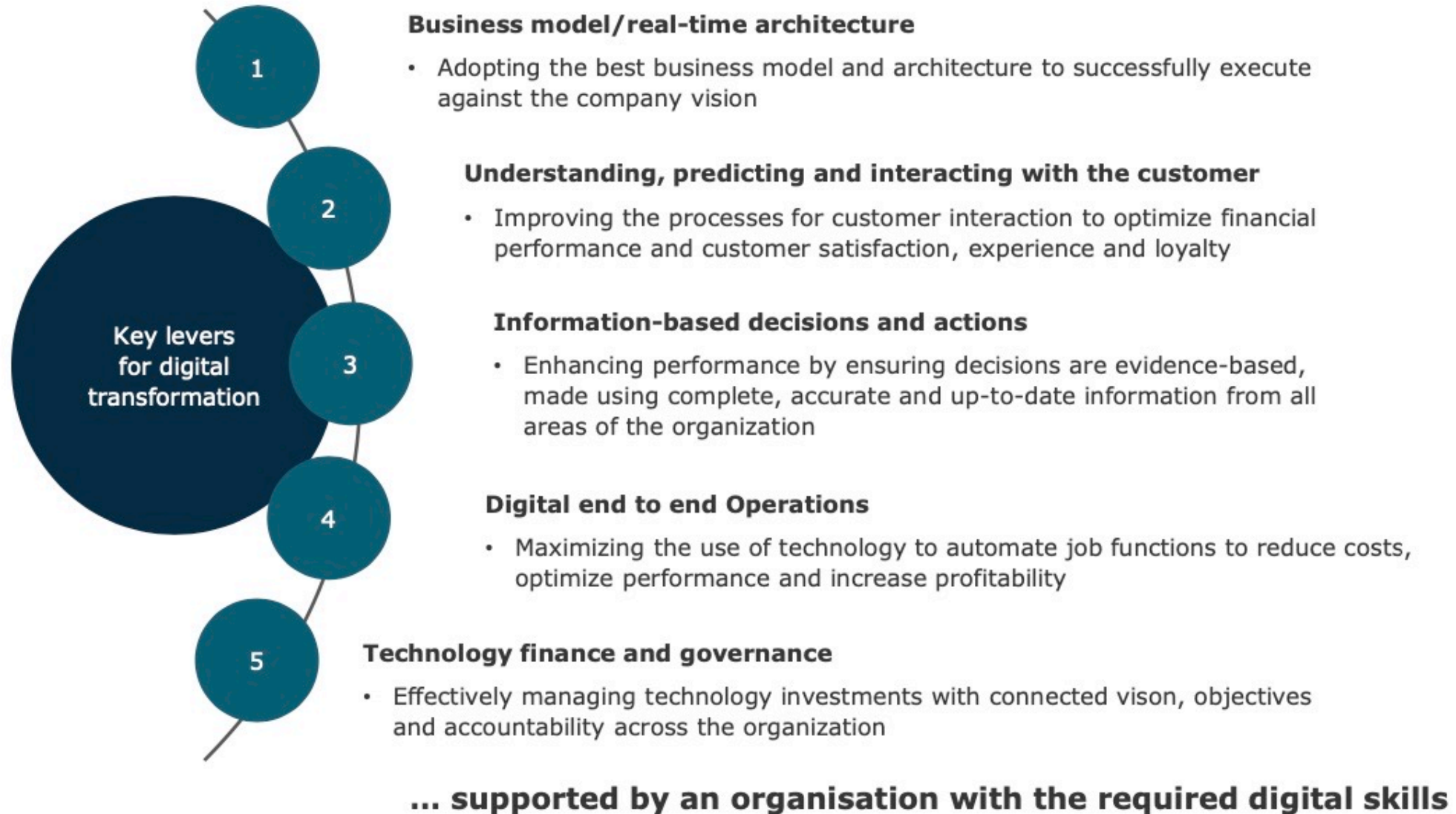
Becoming digital

What is the first step we can take for my new company to improve our data literacy?

Exercise (15 minutes)

Refer to your business canvas.

Digital transformation is built on five key levers



Another Perspective: Using Process Automation

STAGE 02

Monitor & relate production, distribution & shipment of products and services

STAGE 04

Using different strategies and approaches to view the entire chain regularly.

STAGE 05

Working efficiently at each and every step involved in the entire chain process.

STAGE 01

Administrator schedules meeting for candidate to complete paperwork

STAGE 03

Regular check-ins on internal inventories, productions, distributions & sales

STAGE 06

Control the management flow of products & services, from product origin.

Six Building Blocks of Digital Transformation

Customer Decision Journey

Deep analysis and ethnographic research to understand how and why customers make decisions

Organization

Agile, flexible, and collaborative processes and capabilities that follow strategy

Data Analytics

Usable and relevant customer analytics tied to goals and strategies



Strategy and Innovation

Focus on future value and drive fueled by experimentation

Process Automation

Reinvented processes and customer journeys through automation and agile processes

Technology

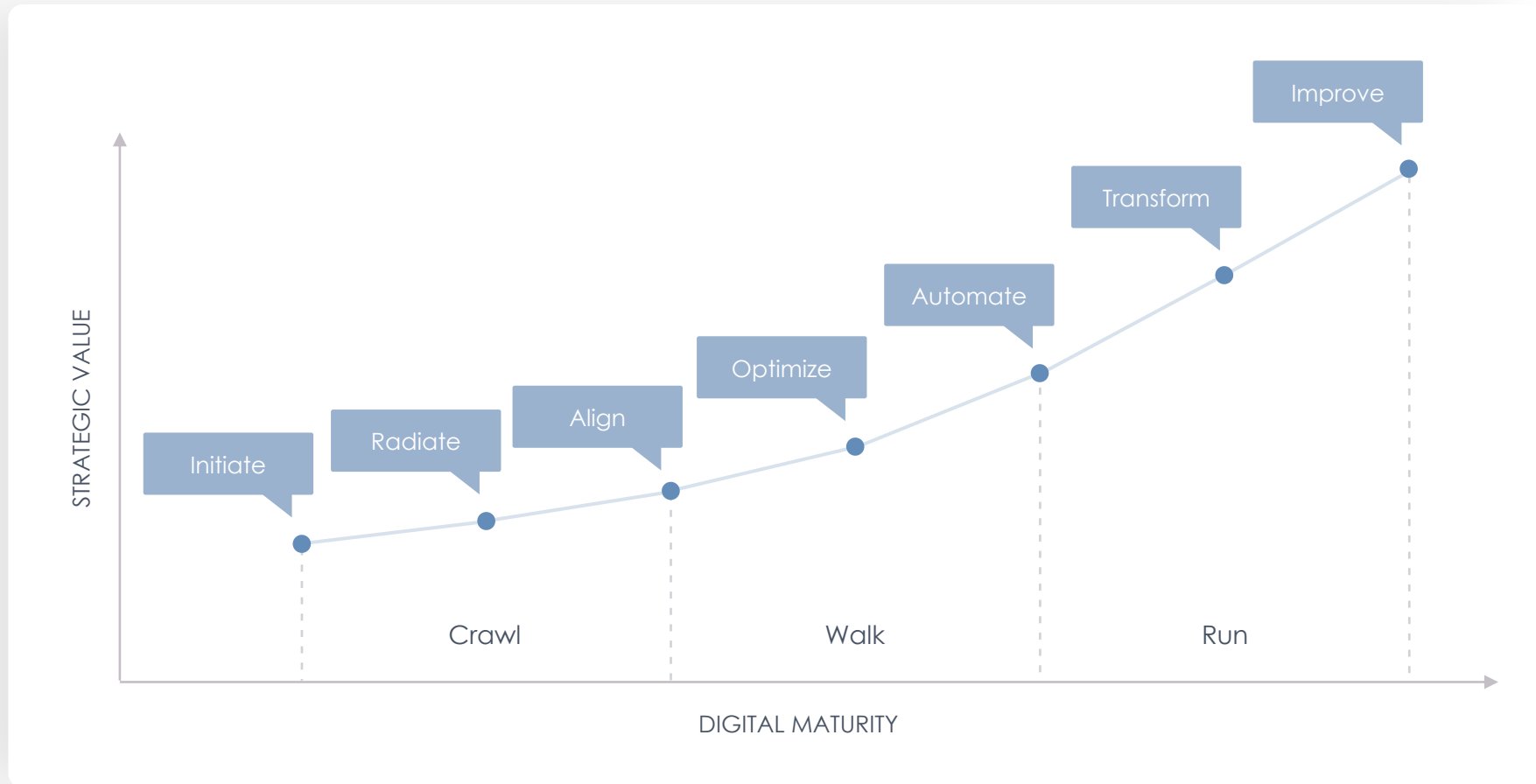
2-Speed IT to support core functions and rapid development

Source: Your Exec 2022

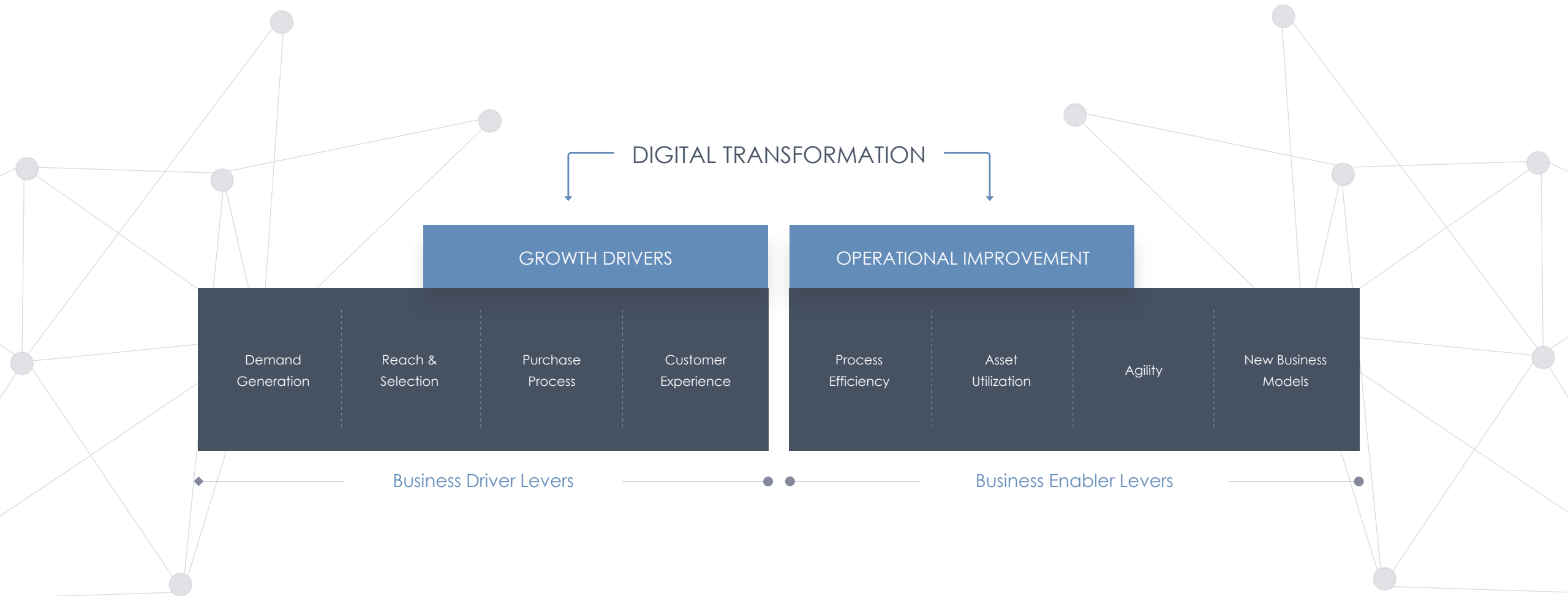
Digital Transformation Capability Model



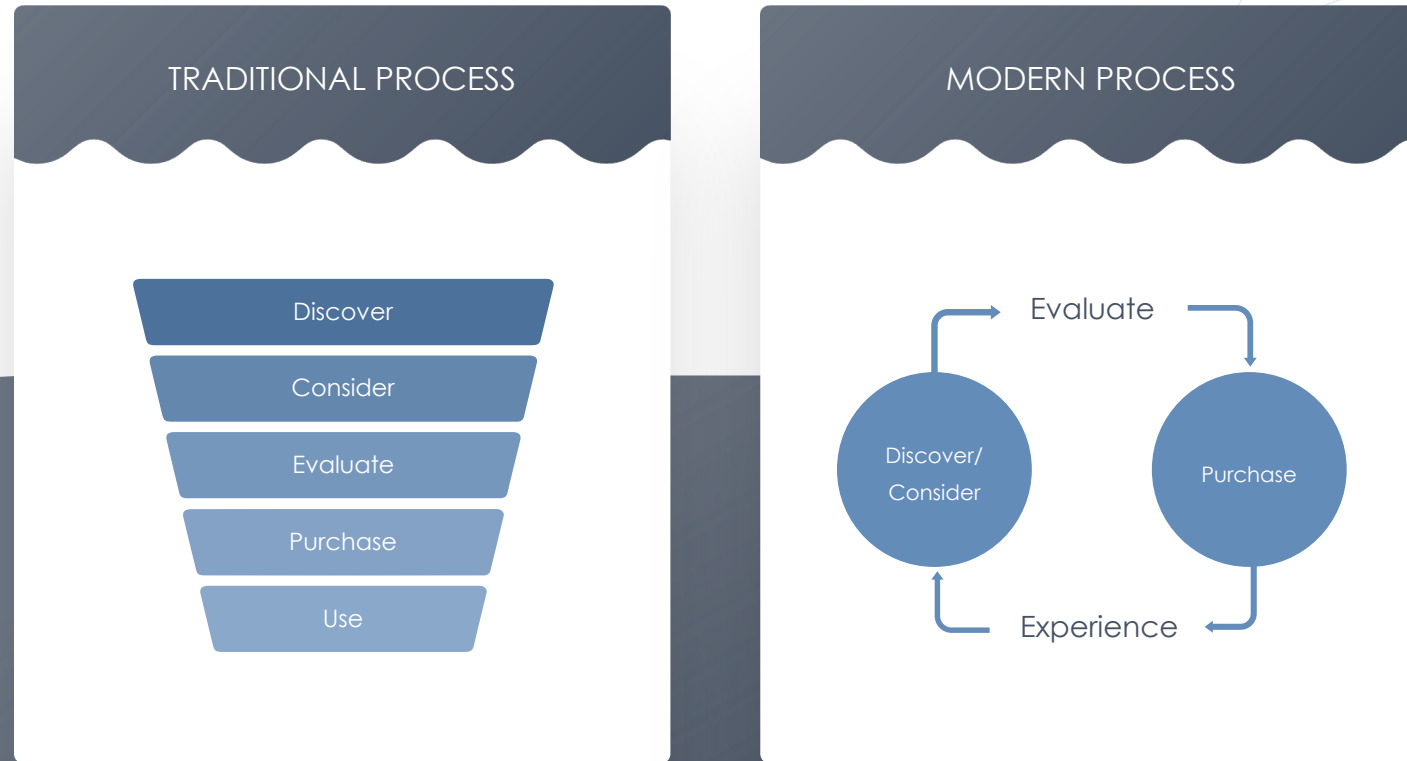
Digital Maturity Model



Levers to Digital Transformation

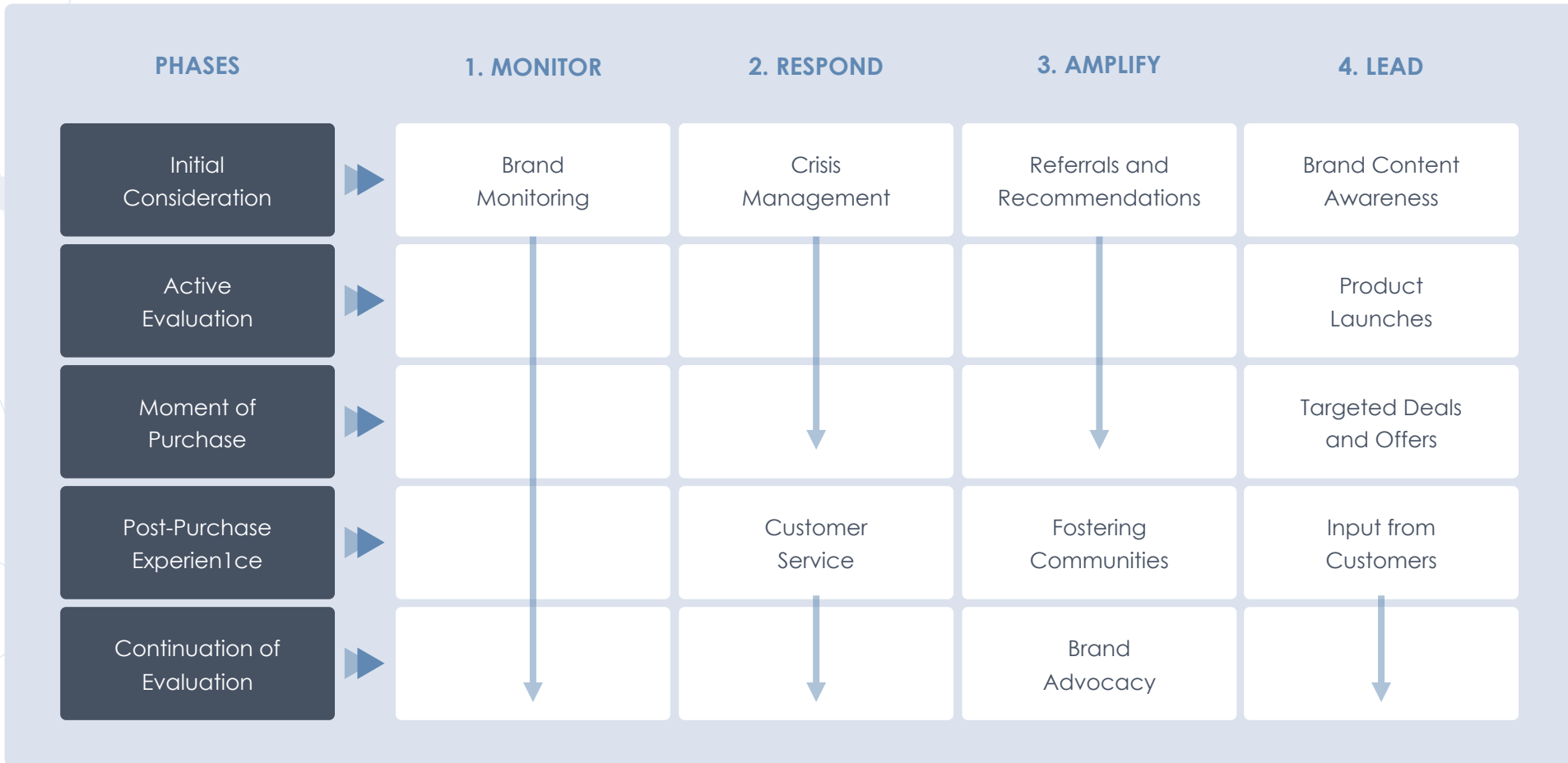


Shift in Customer Experience



In the modern view, the customer goes through a cyclical process, as she moves from Discover/Consider to Purchase and eventually back again. Each phase in the process represents a potential marketing battleground where companies compete for the customer's purchase and loyalty. This is a fundamental shift from the traditional view of sales, which is conceptualized linearly (with no feedback cycle component).

Social Media on Customer Decision Journey



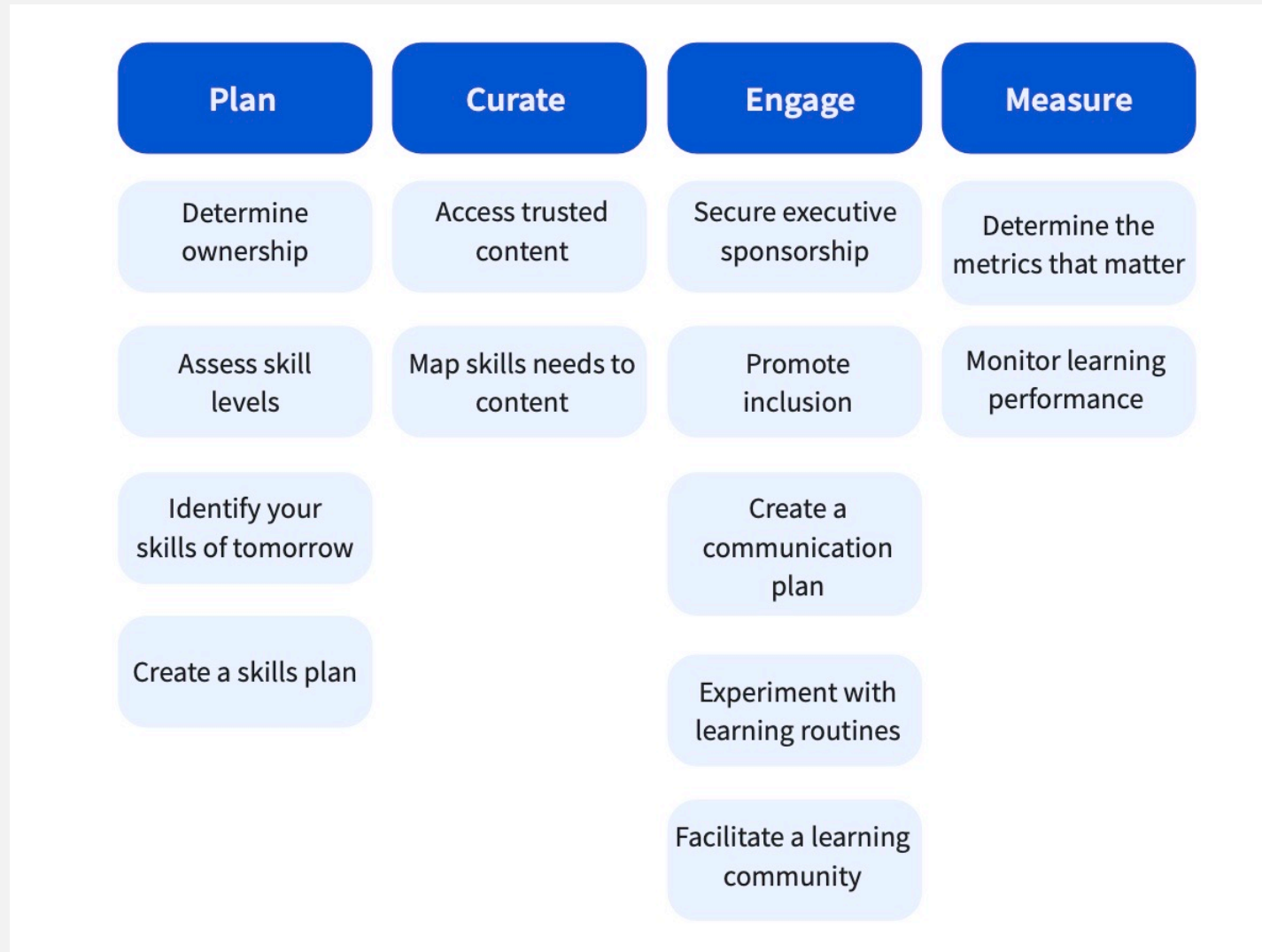
Digital Maturity Assessment Scoring

Digital Maturity Of Customer Experience	Accounting	01	02	03	04	TOTAL 9
	Customer Engagement	01	02	03	04	
	Service Delivery	01	02	03	04	
Digital Maturity Of Operations	Employee Training	01	02	03	04	TOTAL 8
	General Business Processes	01	02	03	04	
	Field Work	01	02	03	04	
Digital Maturity Of IT	Information	01	02	03	04	TOTAL 9
	Communication Flow	01	02	03	04	
	IT Systems	01	02	03	04	

DATA LITERACY

The World Bank defines data literacy as an individual's capacity to find, access, read, work with, and analyze data to responsibly inform decisions.

HOW TO BUILD THE FUTURE ORGANIZATION BASED ON DATA, VIEWED FROM ANOTHER PERSPECTIVE?



SESSION SUMMARY

Data is the new oil. Think data.

Begin easy. What new insight can you gain by sharing and analyzing data? Correlation doesn't mean causation.

Think backwards. Imagine you could leverage the source of the new data (apps, sensors, and satellites)

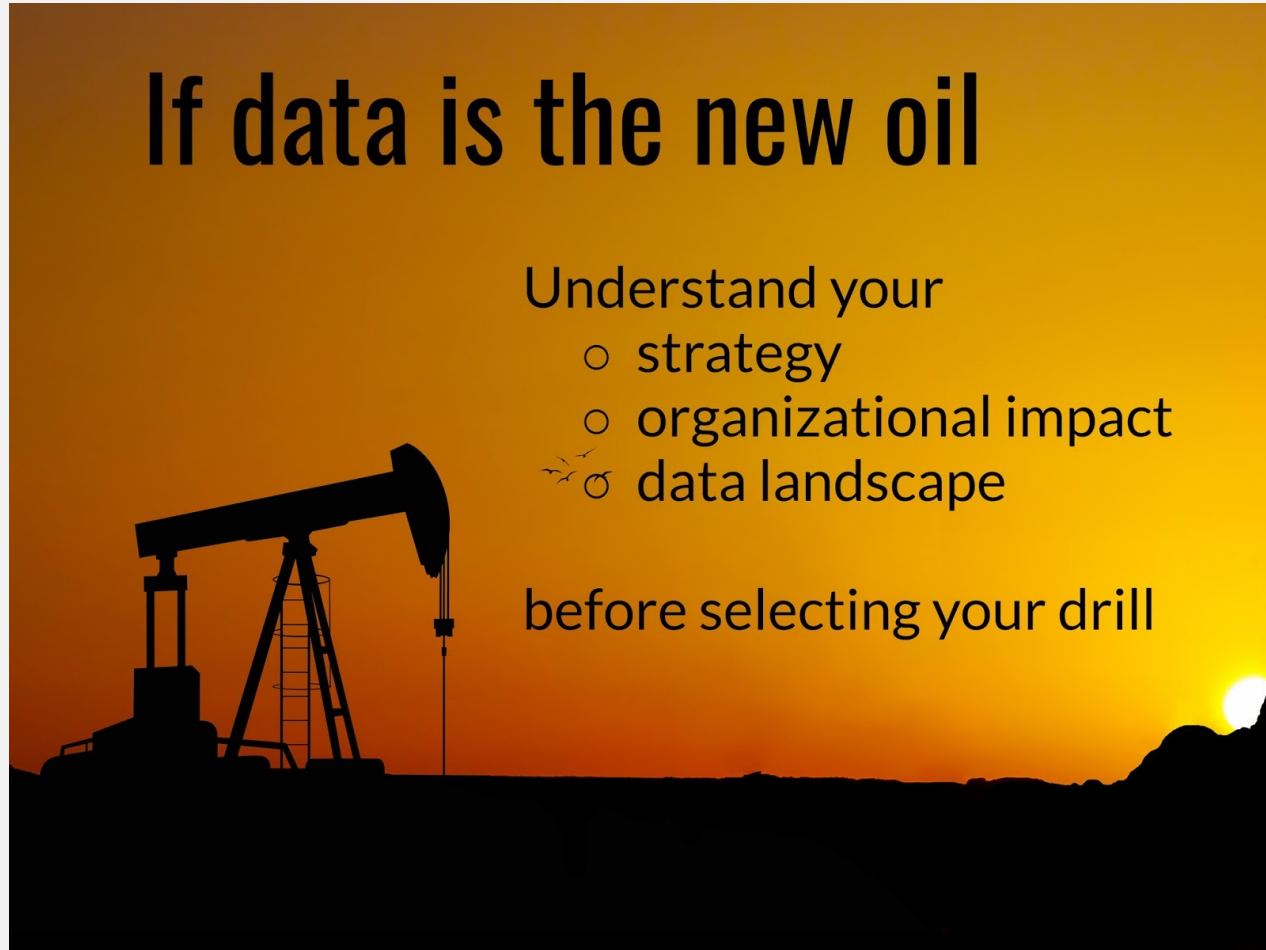
Be more sensitive to data. Understand your broader ecosystem and data landscape.

If data is the new oil

Understand your

- strategy
- organizational impact
- data landscape

before selecting your drill



NEXT SESSION: DON'T JUST SIT THERE! GET GOING BUT PROTECT PRIVACY

Dr G, Your Armchair Data Scientist