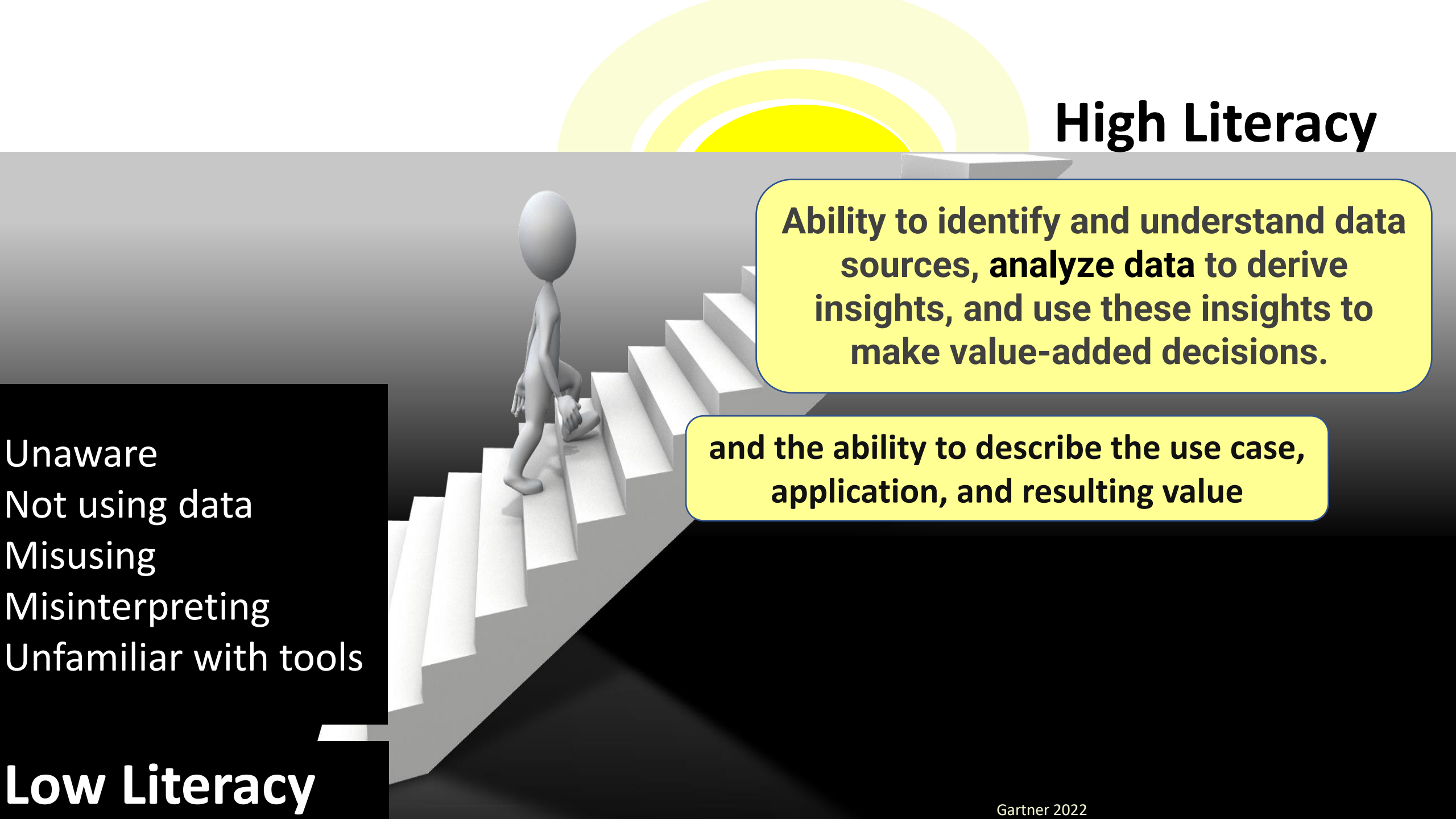
Overcoming Challenges to Achieving….

ELEVATING ENTERPRISE DATA LITERACY

analytic-translator.com

Wendy D. Lynch PhD.



High Literacy

Ability to identify and understand data sources, analyze data to derive insights, and use these insights to make value-added decisions.

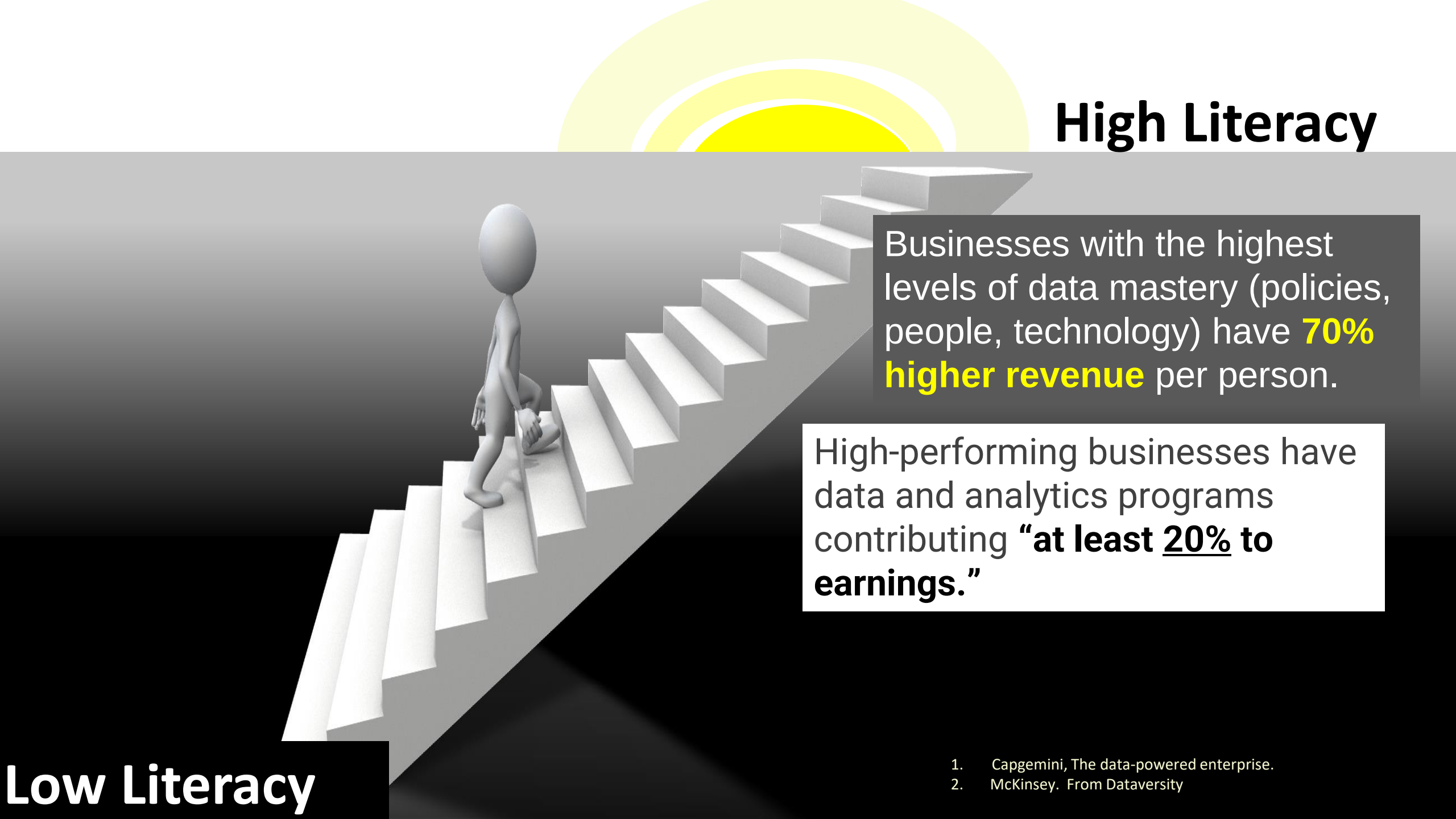
and the ability to describe the use case, application, and resulting value

Unaware
Not using data
Misusing
Misinterpreting
Unfamiliar with tools

Low Literacy

Gartner 2022

High Literacy



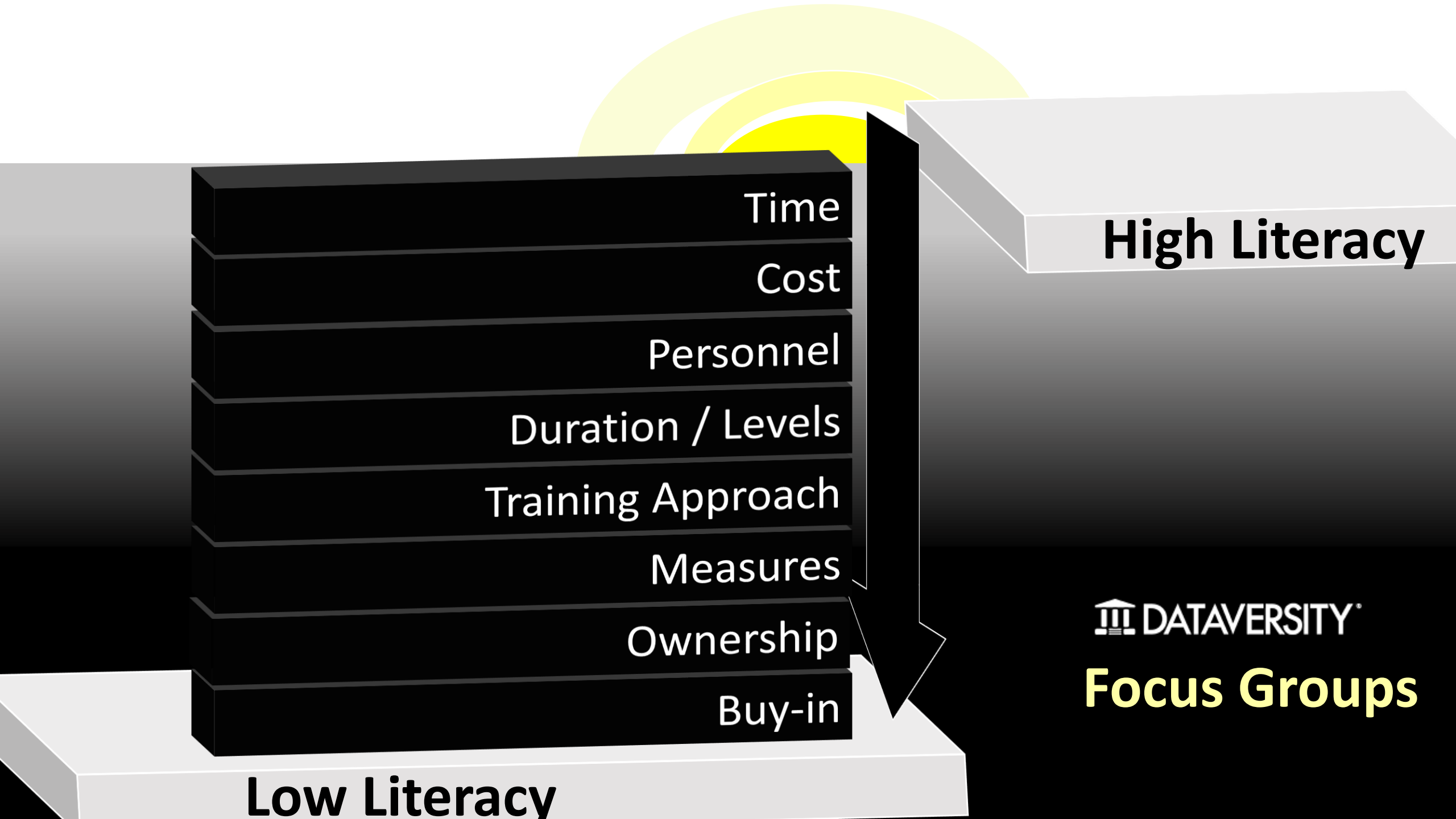
Businesses with the highest levels of data mastery (policies, people, technology) have **70% higher revenue** per person.

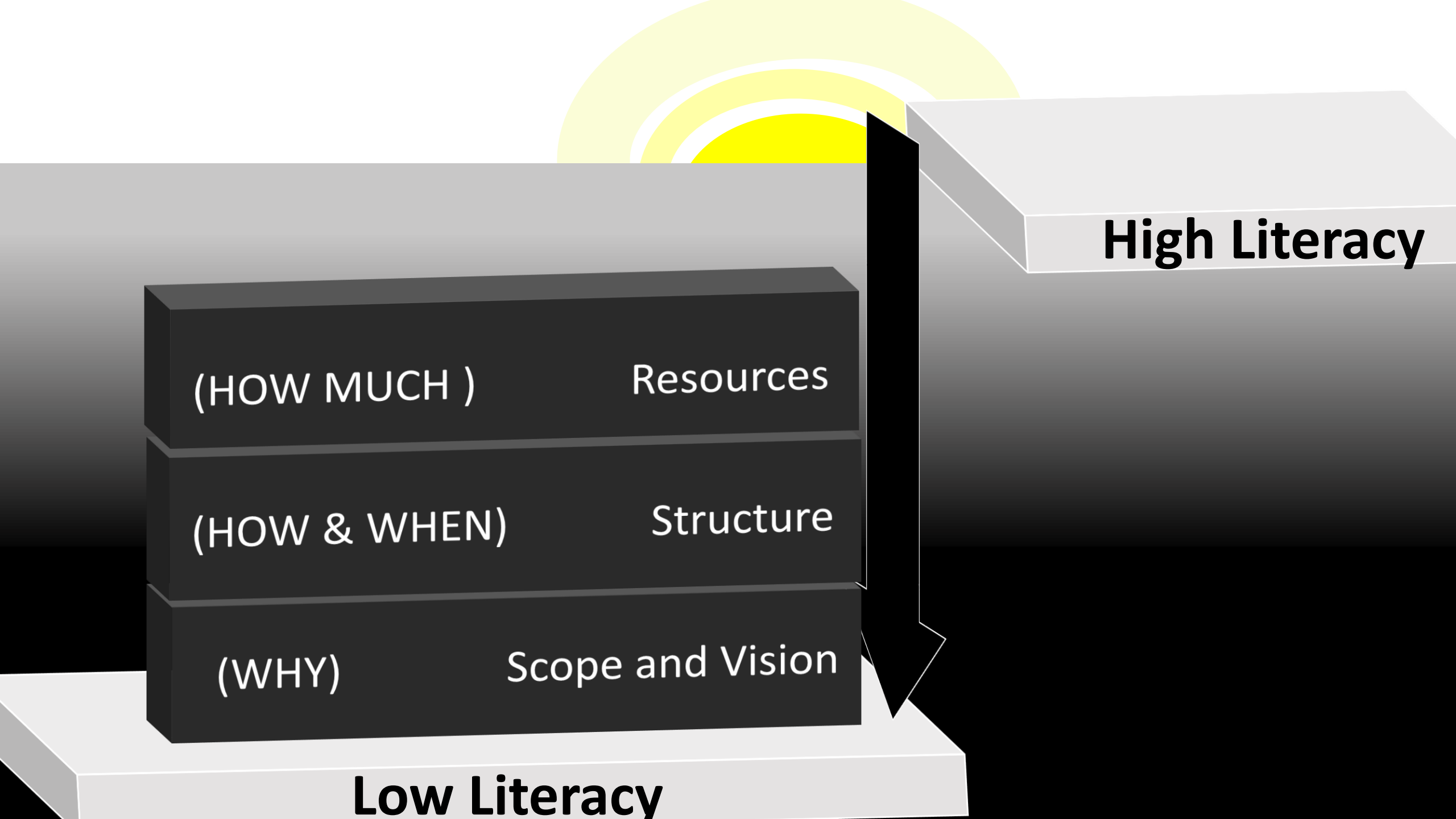
High-performing businesses have data and analytics programs contributing **“at least 20% to earnings.”**

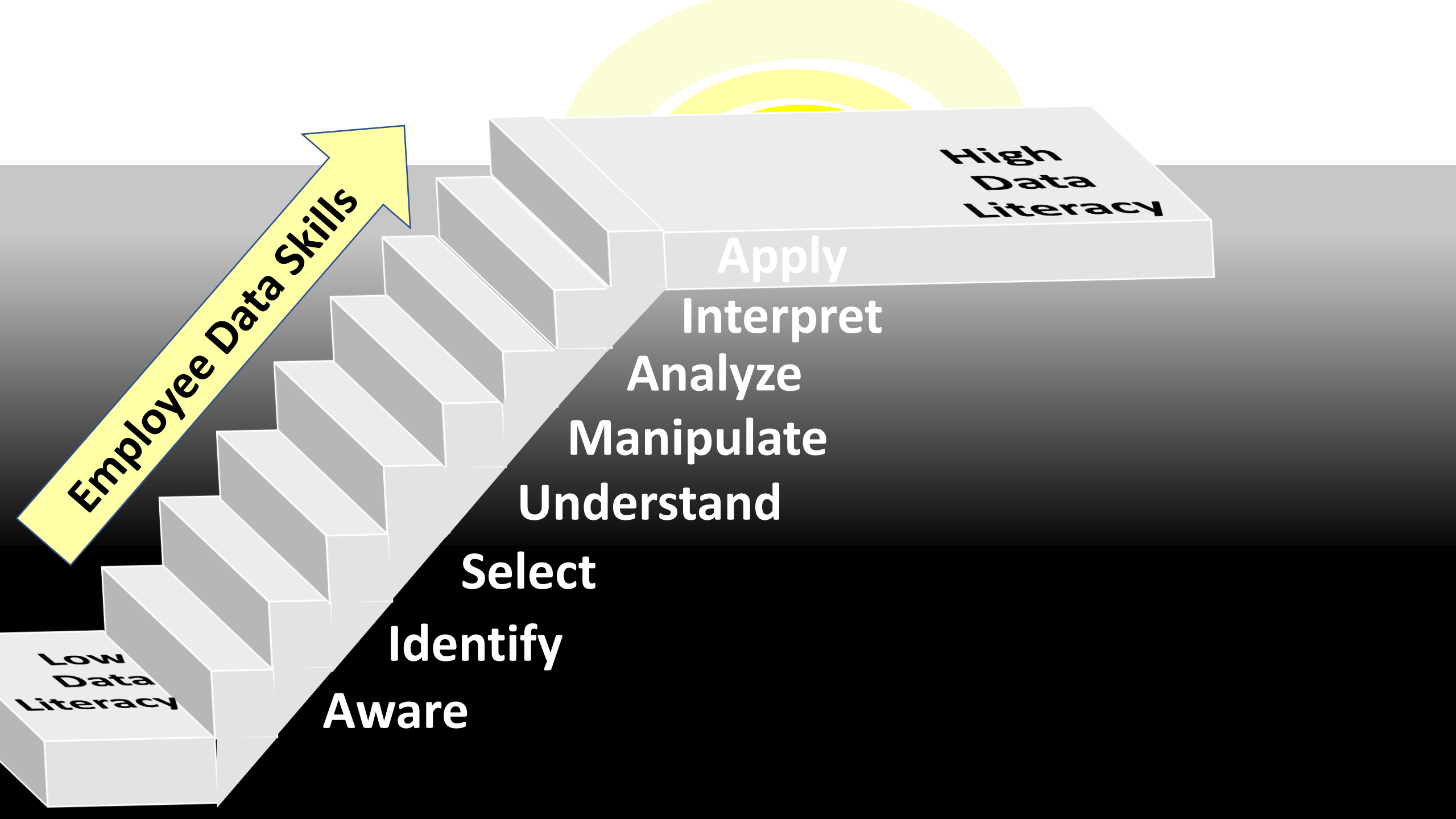
Low Literacy

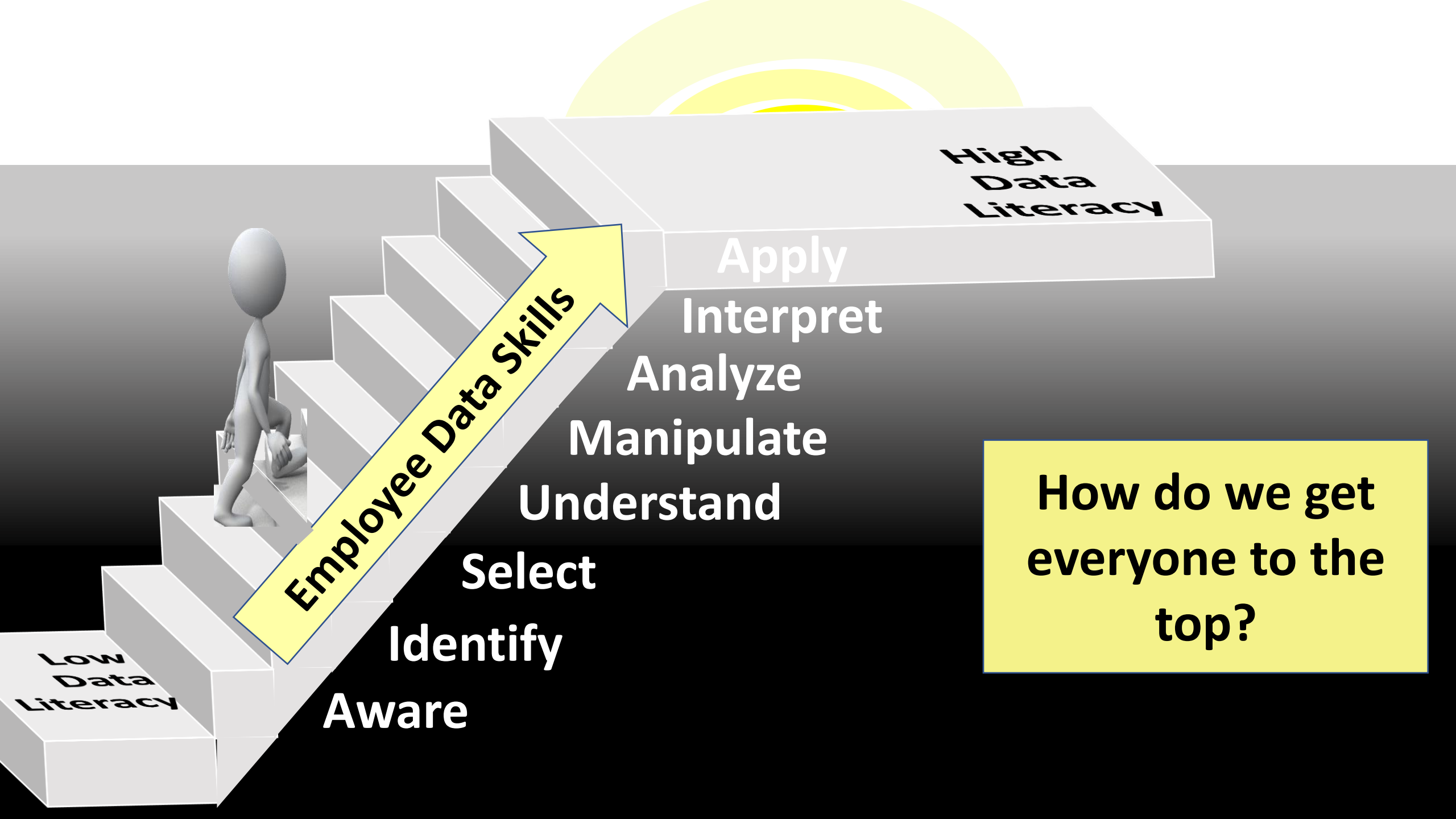
1. Capgemini, The data-powered enterprise.
2. McKinsey. From Dataversity

High Literacy
Ninety percent of business leaders believe data literacy will be critical to their success.
Low Literacy
Everyone, Everywhere, All At Once!
https://hbr.org/2021/08/how-data-literate-is-your-company


Time
Cost
Personnel
Duration / Levels
Training Approach
Measures
Ownership
Buy-in
High Literacy
Low Literacy
DATAVERSITY
Focus Groups

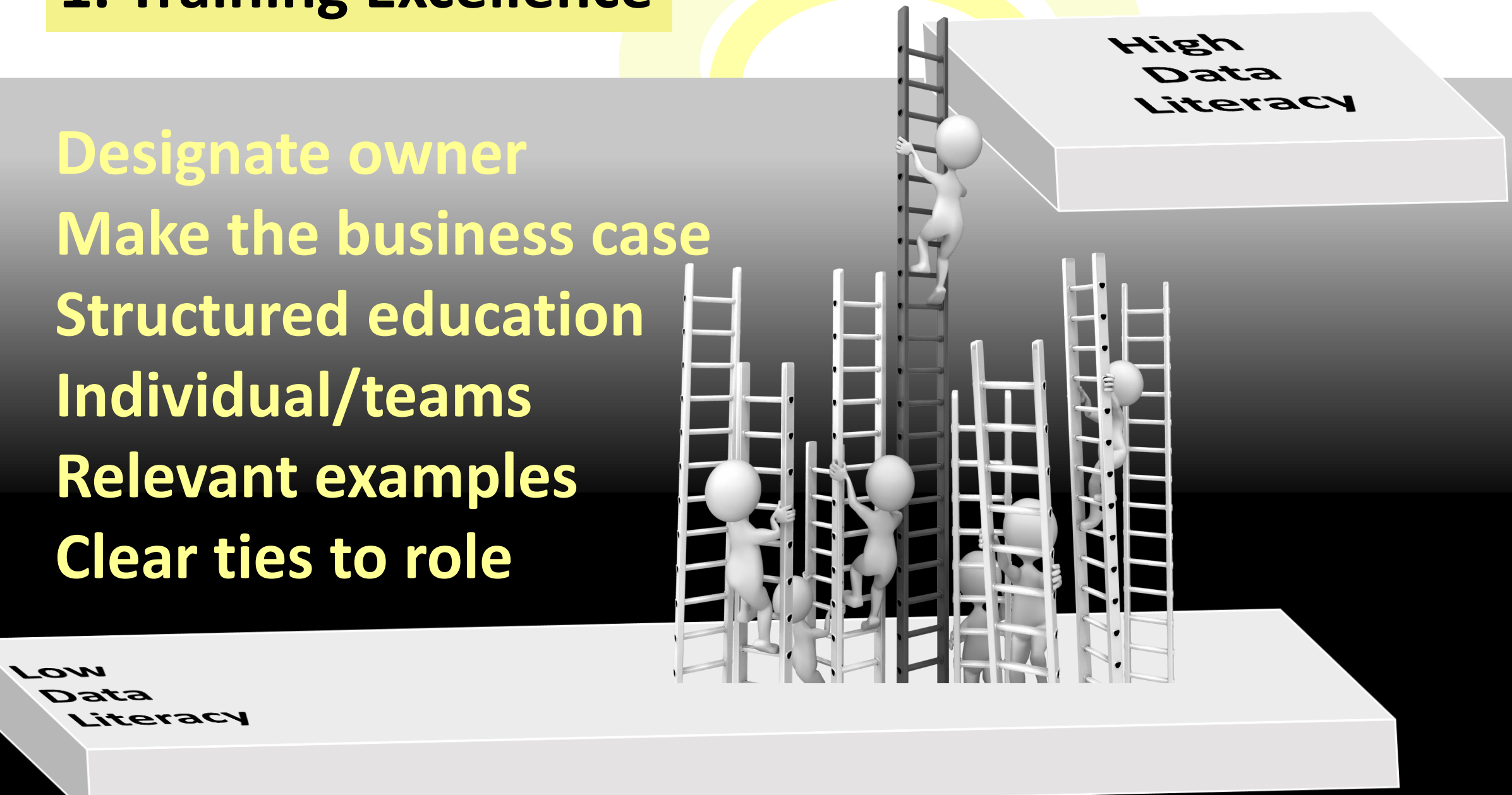

High Literacy
(HOW MUCH)
Resources
(HOW & WHEN)
Structure
(WHY)
Scope and Vision
Low Literacy


Employee Data Skills
High Data Literacy
Apply
Interpret
Analyze
Manipulate
Understand
Select
Identify
Aware
Low Data Literacy


High Data Literacy
Apply
Interpret
Analyze
Manipulate
Understand
Select
Identify
Aware
Low Data Literacy
Employee Data Skills
How do we get everyone to the top?

1. Training Excellence

Designate owner
Make the business case
Structured education
Individual/teams
Relevant examples
Clear ties to role



Generic online courses may not move the needle on literacy

Make it matter.

How does your job connect to business success?

How is that measured?

What does performance look like?

What's good? What's not? How does it change?

What can we learn from the differences?

	Windshield	Rearview mirror
	Decision-Driven	Data-Driven
Focus on...	Decisions	Data
Led by...	Decision-Makers	Data Scientists
Key data...	What's missing	What's available
Explores...	The unknown	The known
Searches...	Wide first	Deep first
Bias...	More readily challenged	May be perpetuated

Focus on the question. Not the Data.

Mark Palmer. Toward Data Science

Make it interesting

Words used in Beyonce's lyrics

Here is a picture of the words used most often in your document. Words used more often are bigger, and ones used less often are smaller. This picture, called a "word cloud", is helpful to get a sense of the most used words in a document.

What do I do next?

WordCounter WTFcsv SameDiff about blog help

TOP WORDS

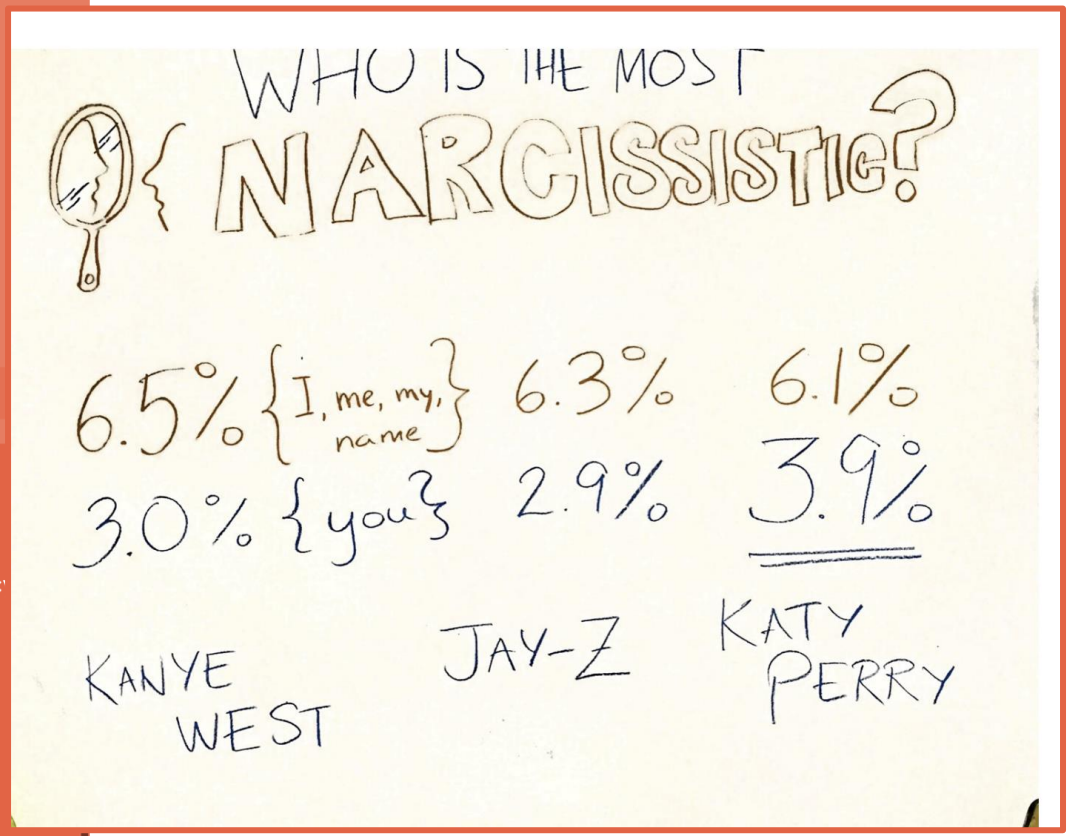
Word	Frequency
i'm	805
love	641
oh	537
like	497
know	480
don't	415
baby	389
it's	380
go	354
â	339
let	330
got	325

BIGRAMS

bigram	Frequency
if you	187
i can	187
i know	171
i love	169
and i	168
i don't	153
oh oh	153
that i	151
to the	146
love you	139
let me	139
in the	137

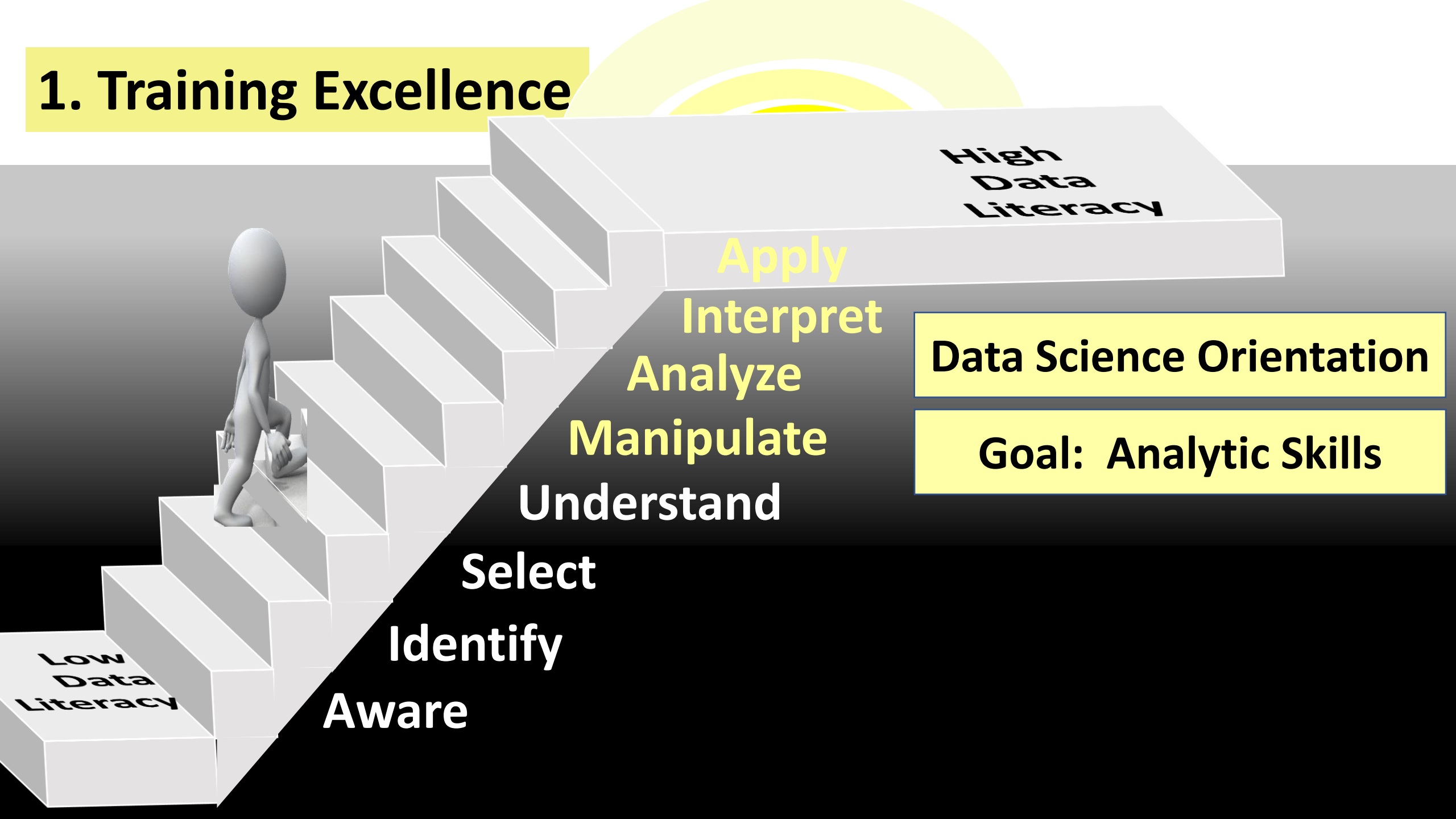
TRIGRAMS

trigram	Frequenc
oh oh oh	94
i love you	83
go go go	81
you must not	80
not know 'bout	80
know 'bout me	80
must not know	80
to the left	80
eh eh eh	68
lost yo mind	66
i know that	66
left to the	60



Climate
COVID

1. Training Excellence



Data Science Orientation

Goal: Analytic Skills

MEDPAGETODAY®

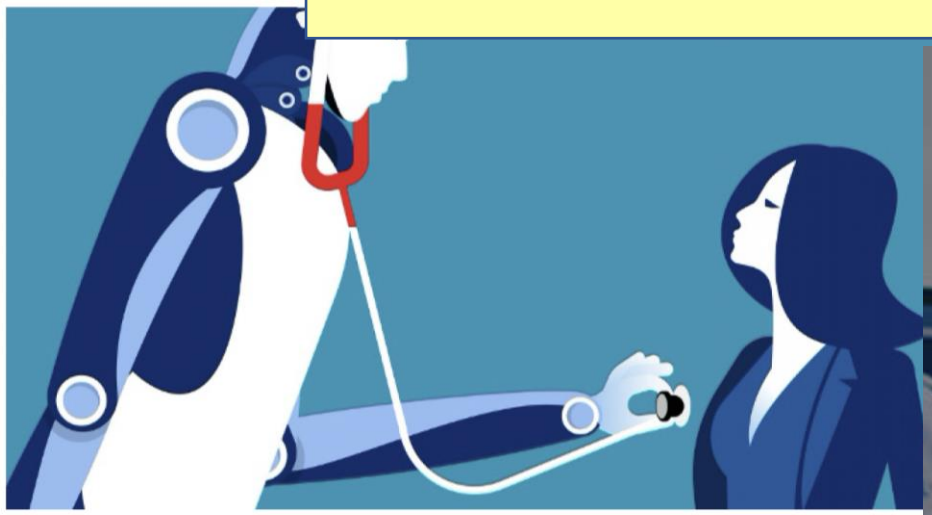
Specialties | COVID-19 | Opinion | Health Policy | Meetings | Special Reports | Break Room | Conditions | Society Partners

Public Health & Policy > Ethics

Why We Need Patients to Trust AI in Medicine

by Celi

"To me, the next generation of clinicians all have to be data scientists"



Doctors and engineers are asking: Can we trust Dr. AI?

Think about this……

Every Doctor

Every CEO

Every Psychologist

Every Engineer

Every HR Director

Every Employee

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Leaders Overestimate Current Levels of Literacy

Recent studies find that only 21% of employees are confident in their data skills

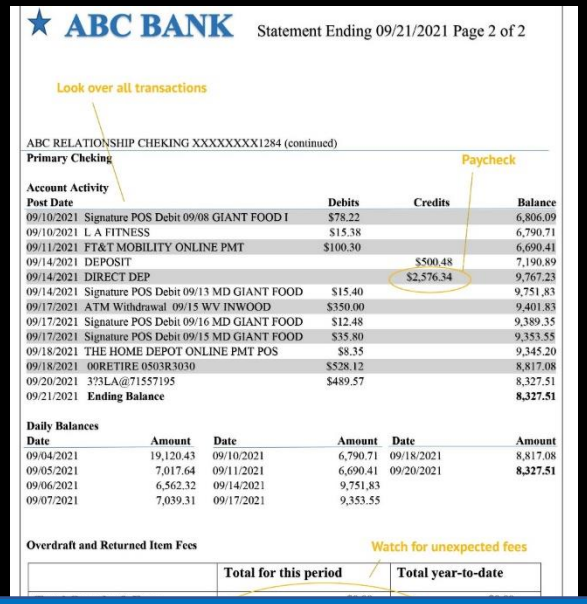
Other studies estimate fewer than 10% have high literacy

https://hbr.org/2021/08/how-data-literate-is-your-company

What is Typical

One third of Americans don't know that a quarter of a pie is the same as 25%

54% admit they simply smile and nod rather than reveal they don't understand data or statistics



ABC BANK Statement Ending 09/21/2021 Page 2 of 2

Look over all transactions

ABC RELATIONSHIP CHEKING XXXXXXXX1284 (continued)

Primary Cheking

Paycheck

Account Activity

Post Date		Debits	Credits	Balance
09/10/2021	Signature POS Debit 09/08 GIANT FOOD I	$78.22		6,806.09
09/10/2021	L A FITNESS	$15.38		6,790.71
09/11/2021	FT&T MOBILITY ONLINE PMT	$100.30		6,690.41
09/14/2021	DEPOSIT		$500.48	7,190.89
09/14/2021	DIRECT DEP		$2,576.34	9,767.23
09/14/2021	Signature POS Debit 09/13 MD GIANT FOOD	$15.40		9,751.83
09/17/2021	ATM Withdrawal 09/15 WV INWOOD	$350.00		9,401.83
09/17/2021	Signature POS Debit 09/16 MD GIANT FOOD	$12.48		9,389.35
09/17/2021	Signature POS Debit 09/15 MD GIANT FOOD	$35.80		9,353.55
09/18/2021	THE HOME DEPOT ONLINE PMT POS	$8.35		9,345.20
09/18/2021	00RETIRE 0503R3030	$528.12		8,817.08
09/20/2021	333LA@71557195	$489.57		8,327.51
09/21/2021	**Ending Balance**			**8,327.51**

Daily Balances

Date	Amount	Date	Amount	Date	Amount
09/04/2021	19,120.43	09/10/2021	6,790.71	09/18/2021	8,817.08
09/05/2021	7,017.64	09/11/2021	6,690.41	09/20/2021	**8,327.51**
09/06/2021	6,562.32	09/14/2021	9,751.83		
09/07/2021	7,039.31	09/17/2021	9,353.55		

Overdraft and Returned Item Fees

Watch for unexpected fees

	Total for this period	Total year-to-date

22% reveal they can't understand everyday numeric information, **like bank statements**

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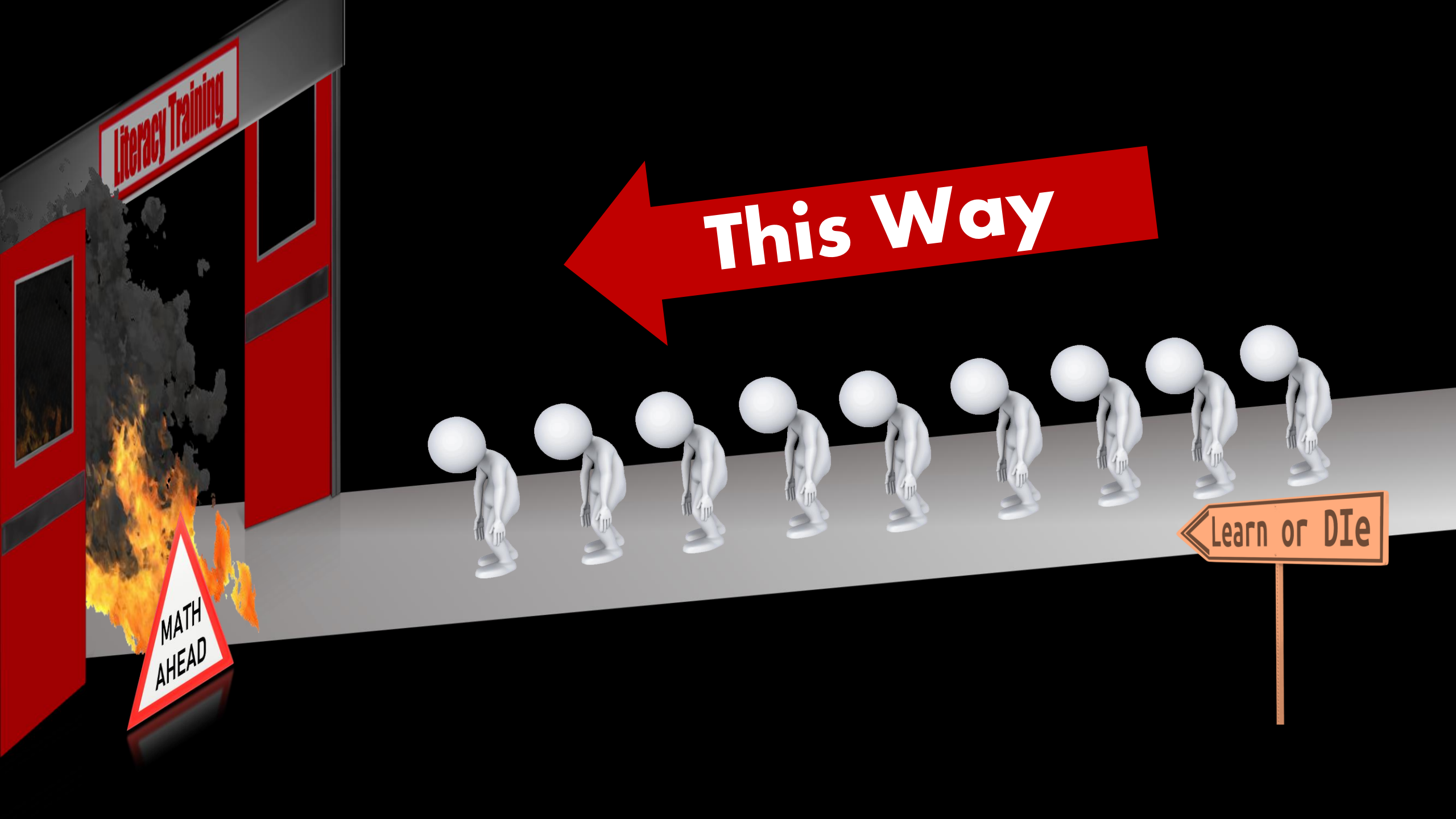
Data Camp/OnePoll Oct 2022. 2000 respondents

WELCOME TO LITERACY TRAINING!!

More Math = More Fun !!


Literacy Training
This Way
MATH AHEAD
Learn or DIe

What will it take?

Is it realistic?

For every organization?

For every employee?

FORBES:
The Problems with Data Literacy

Assuming data illiteracy is the reason companies fail to realize value from data creates a toxic divide between data producers and consumers.

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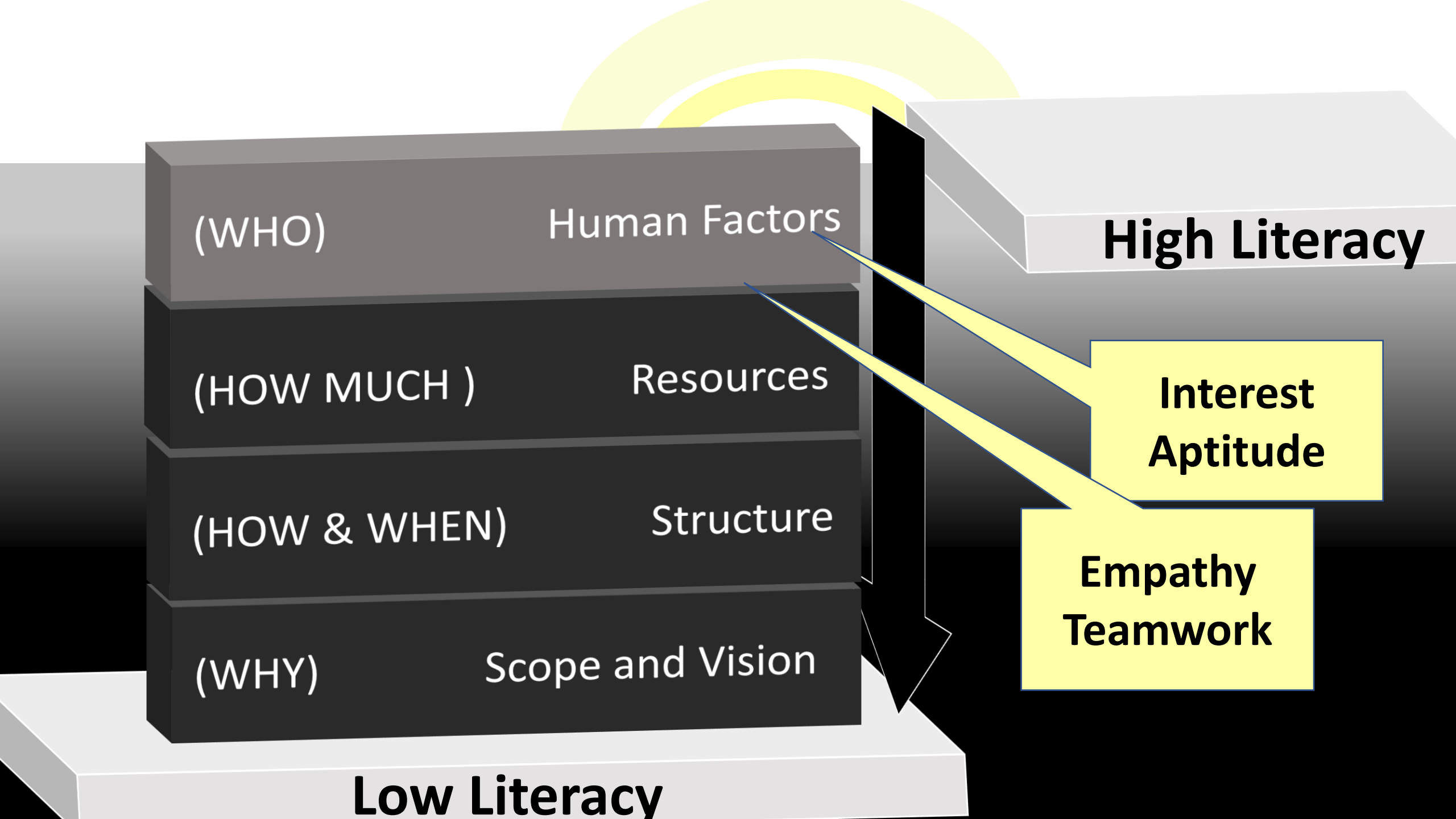
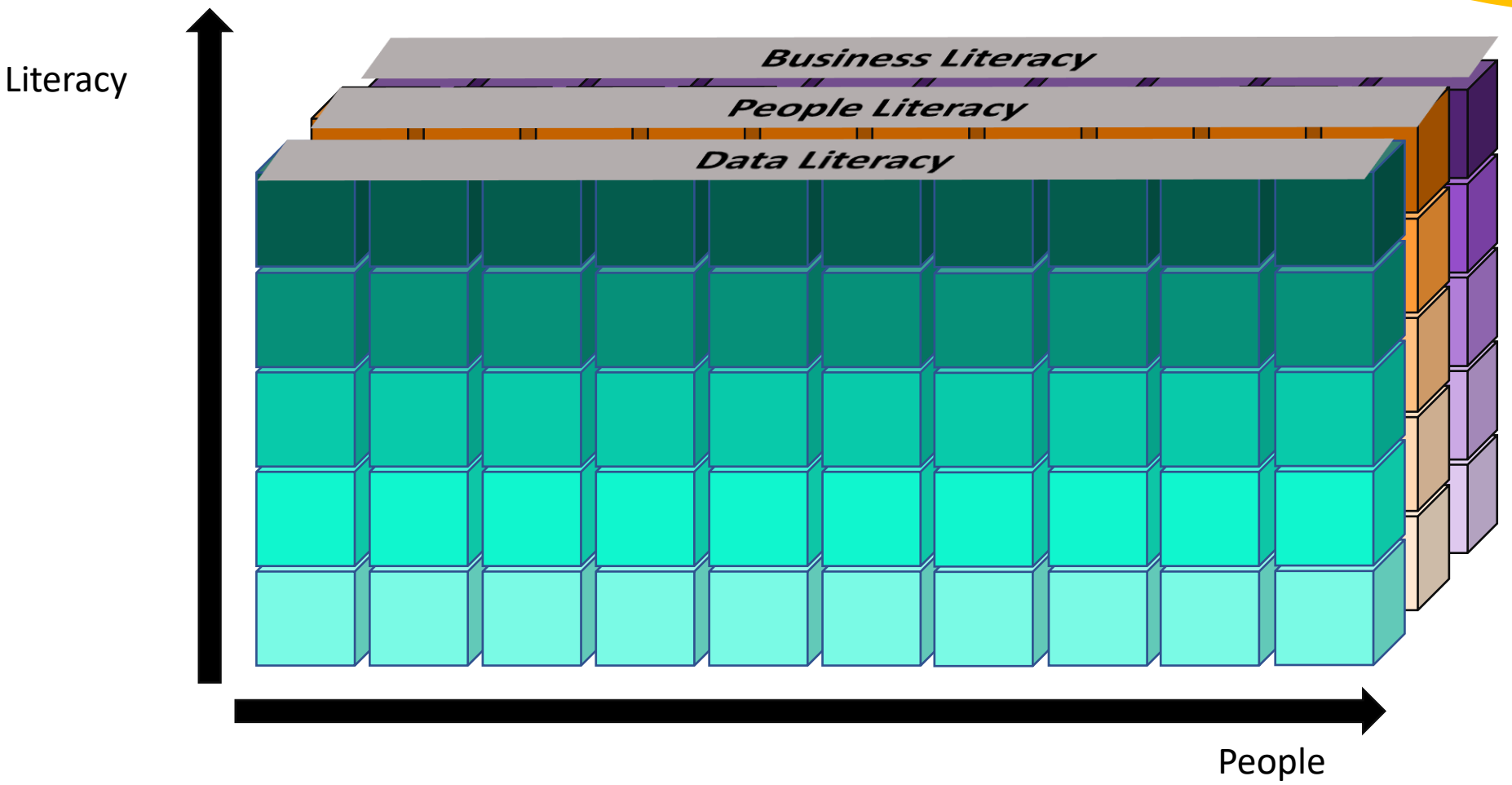
Forbes: the problems with Data Literacy. 02/10/2023

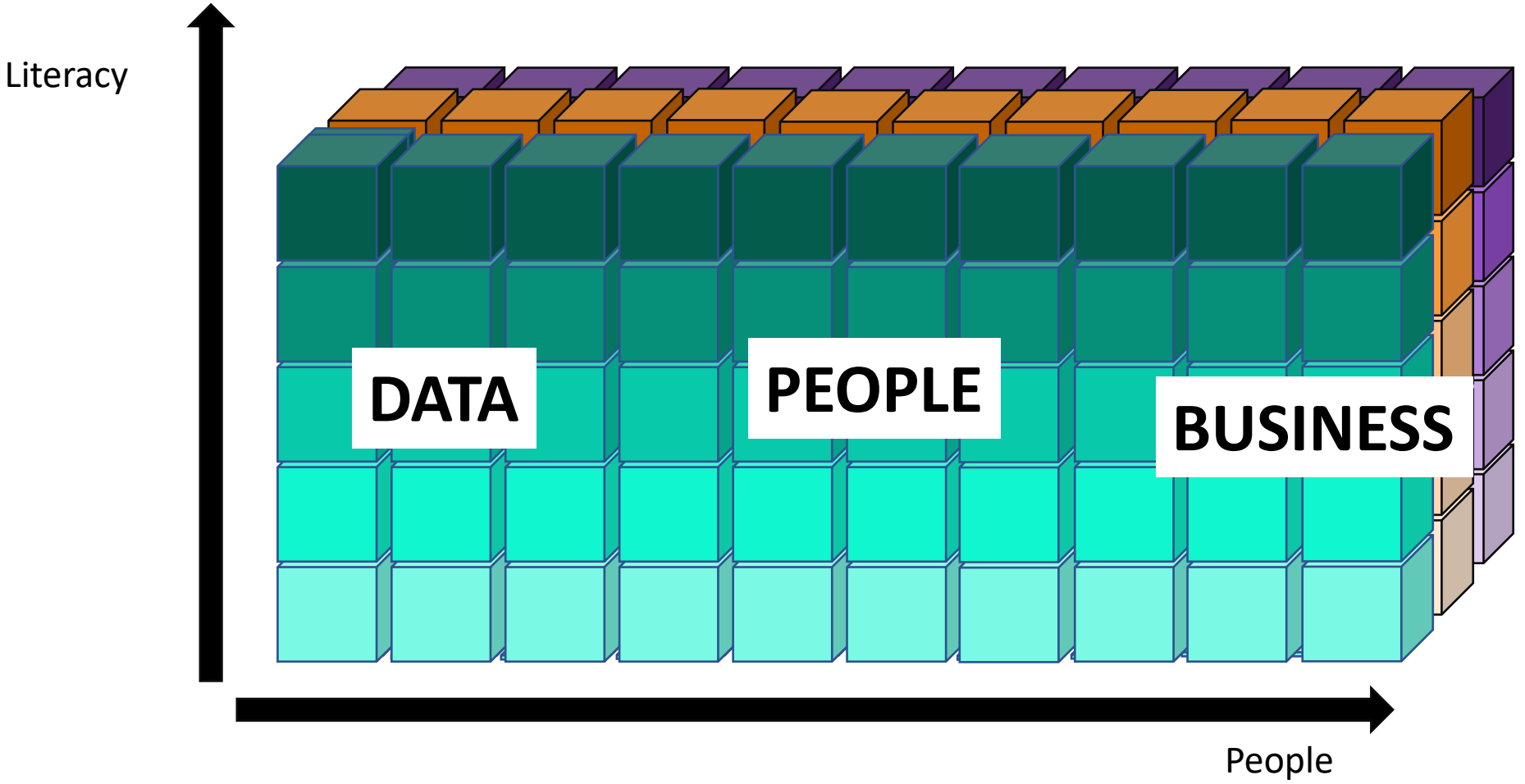

(WHO)
Human Factors
(HOW MUCH)
Resources
(HOW & WHEN)
Structure
(WHY)
Scope and Vision
Low Literacy
High Literacy
Interest
Aptitude
Empathy
Teamwork

What we want: High Literacy

FLASHBACK

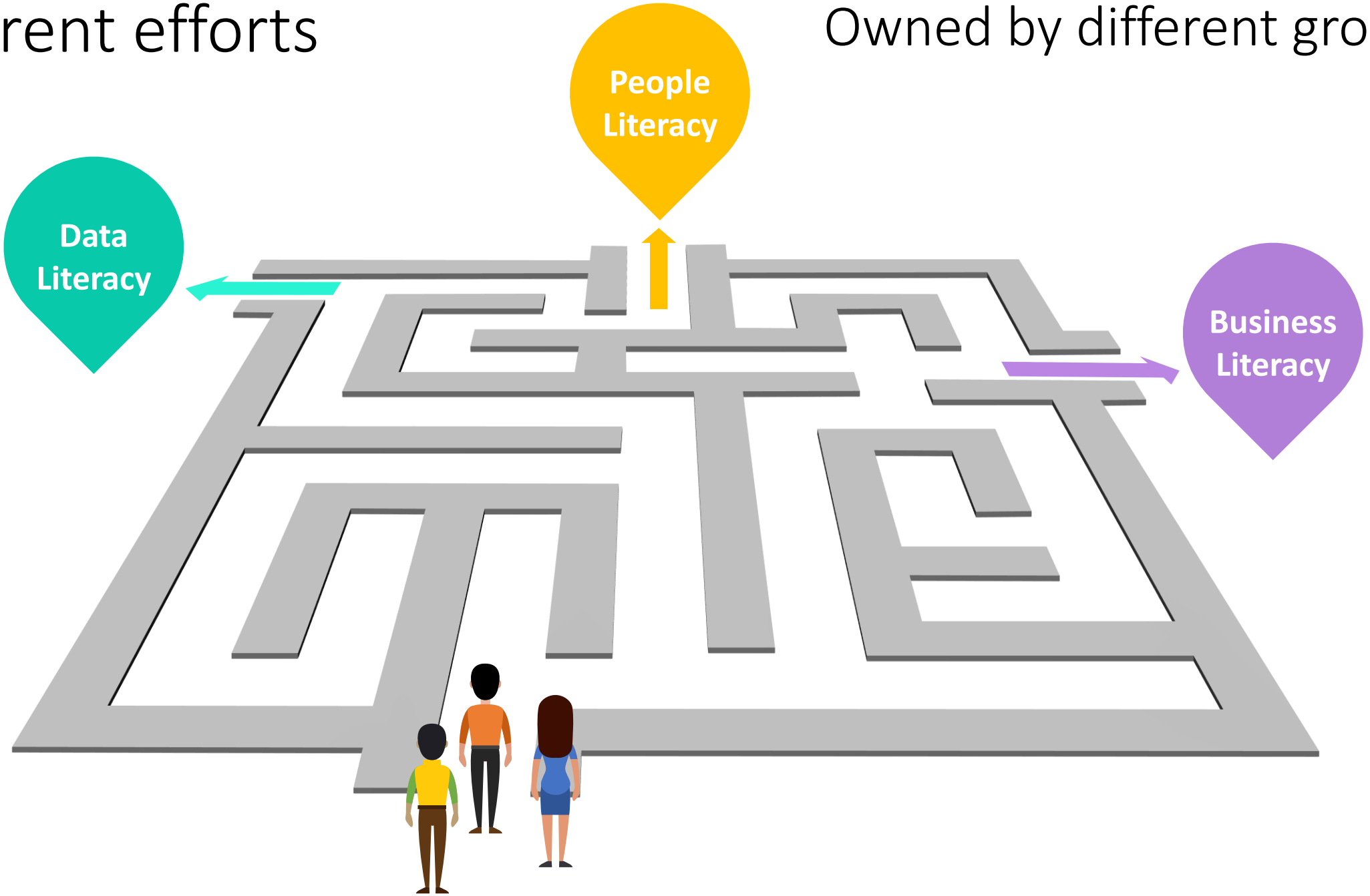


What we have



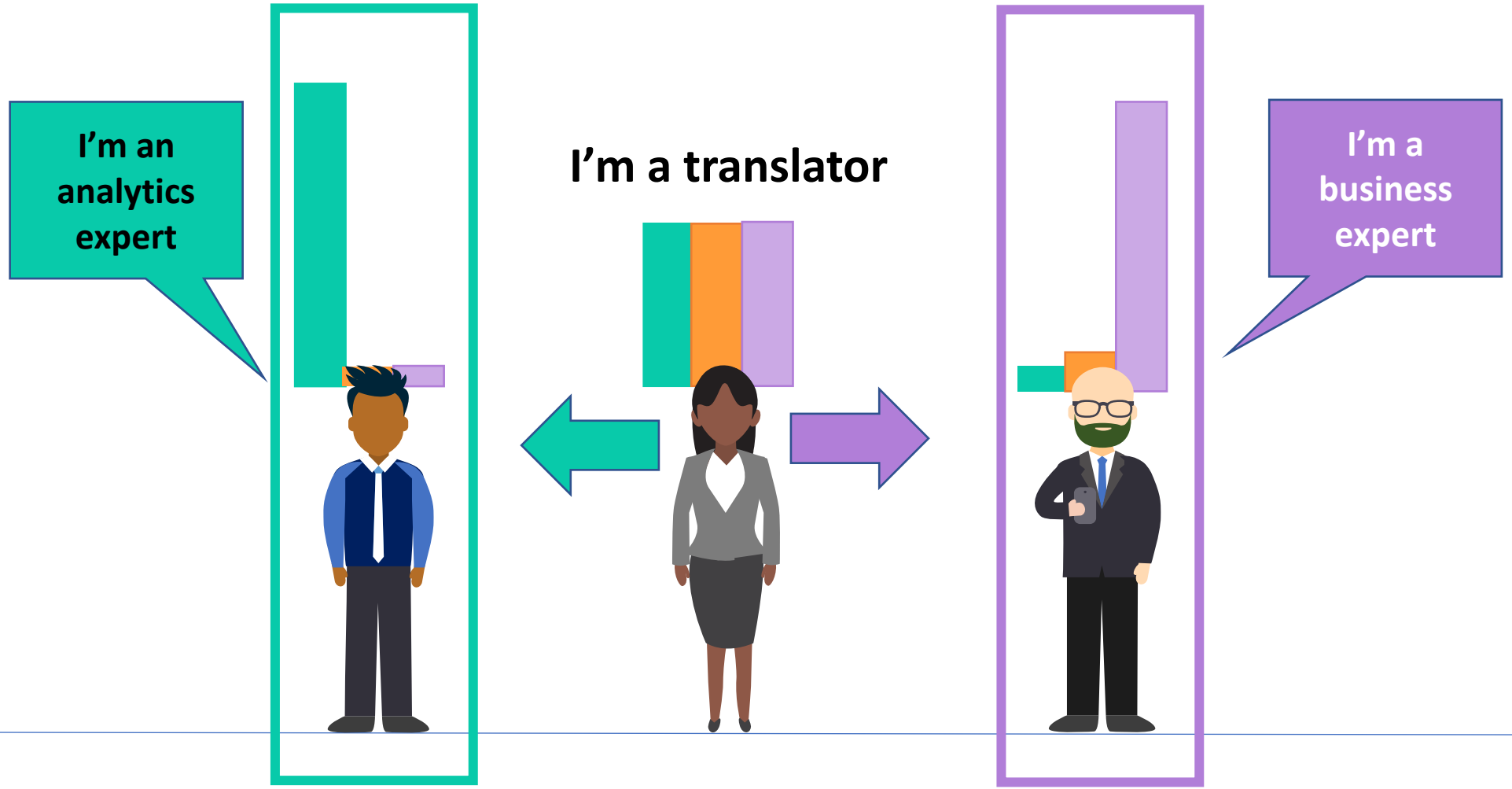
Different efforts

Owned by different groups



We all have different strengths

We all have different strengths

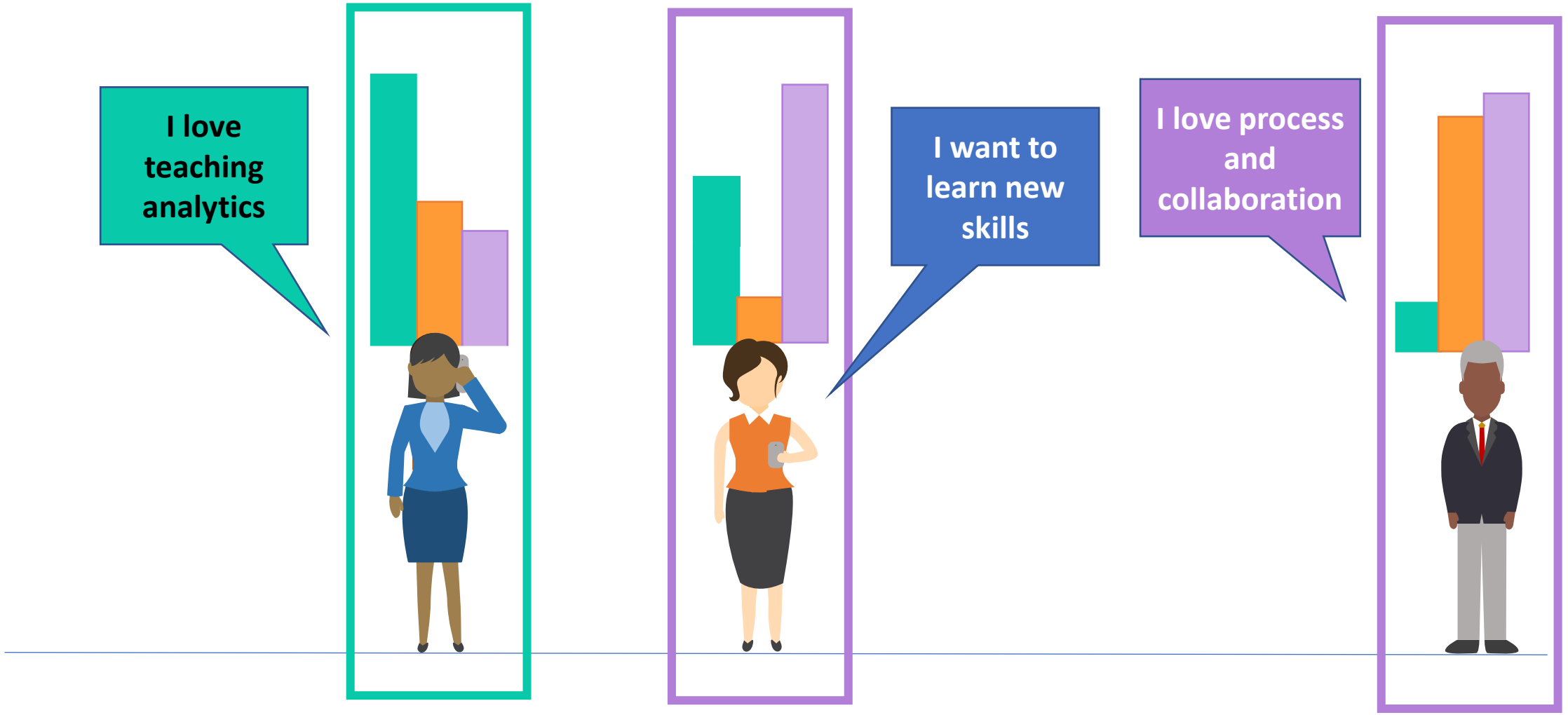


….for some that is translation

We all have different strengths

….and interests

We all have different strengths



….for some it is tech-savvy end-users

Collectively, we have many strengths

Making aligned decisions
(with evidence and empathy)

….that we can leverage

If we think about data literacy ……..

Separately	vs.	Within Context
1. Data literacy is a solitary solution		Maybe it belongs in a broader, integrated context
2. By itself, data literacy will make decisions data-driven		There are strategic and social requirements
3. Everyone can/must become highly literate		Realistically, people have varying strengths
4. We want non-experts to become more expert		Maybe there are combo-roles (translators, tech-savvy. citizen developers)
5. Creates a superior-inferior dynamic		Recognize strengths, fortify weaknesses

High Literacy
Ninety percent of business leaders believe data literacy will be critical to their success.
Low Literacy
Everyone, Everywhere, All At Once!

Is Literacy Really the Goal?

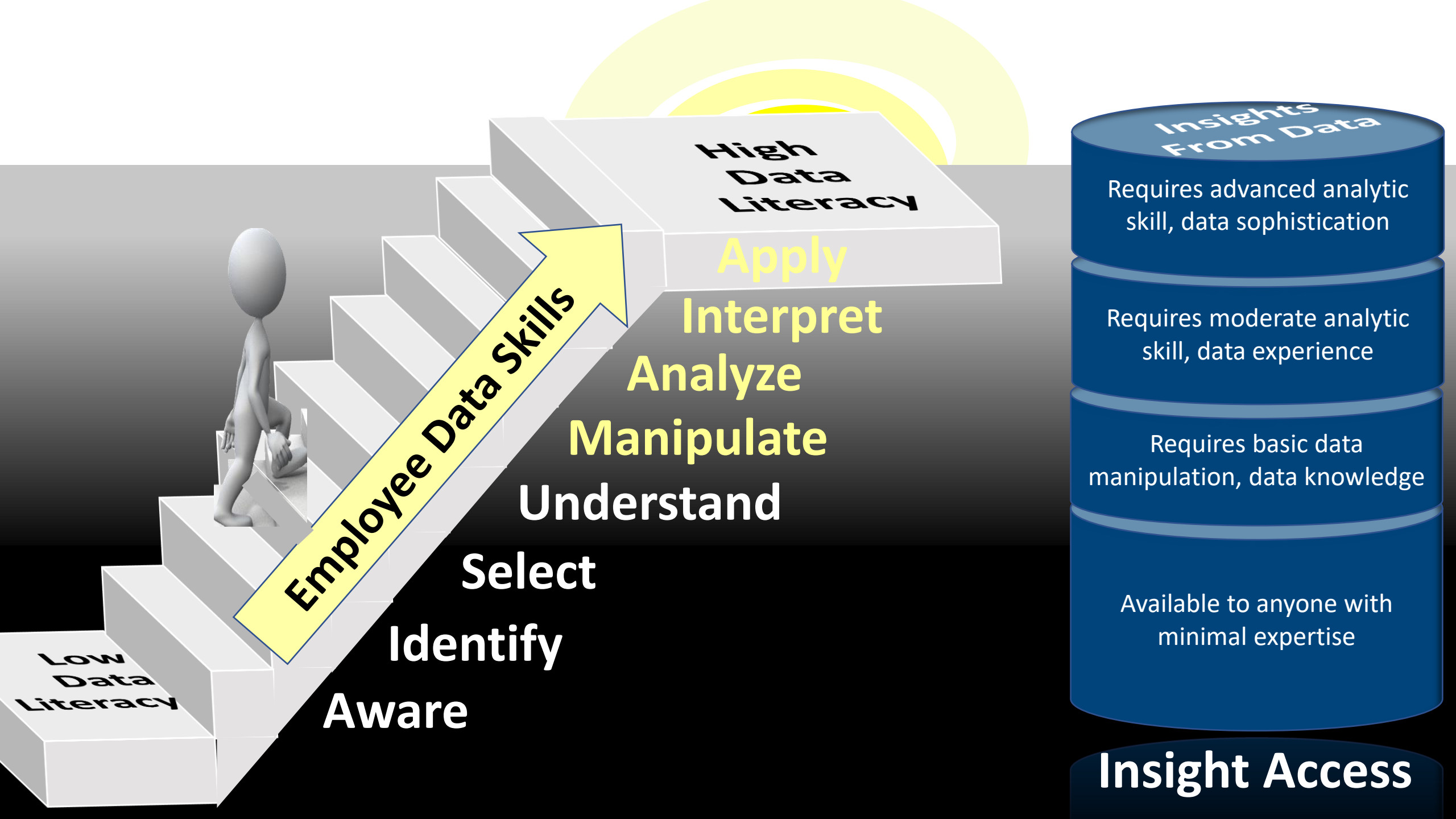
Or is it to be: Highly Insight Driven

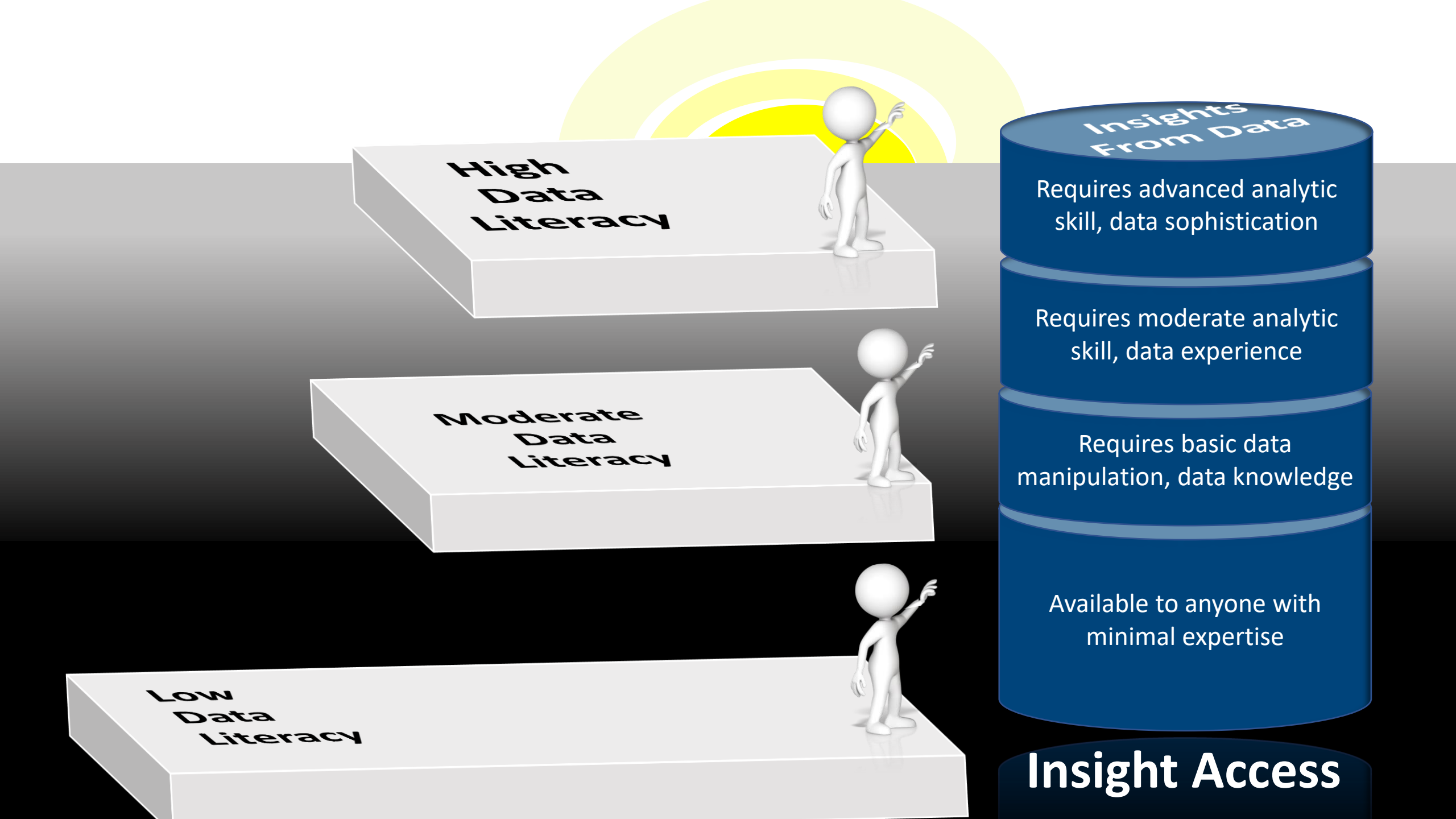
Company-wide intelligent, information-driven decisions and actions.

Consistently

- Use timely information
- Notice problems and opportunities
- Ask better questions
- Make better decisions
- Extract insights at all levels

Low Literacy


Low Data Literacy
High Data Literacy
Employee Data Skills
Aware
Identify
Select
Understand
Analyze
Manipulate
Interpret
Apply
Insights From Data
Requires advanced analytic skill, data sophistication
Requires moderate analytic skill, data experience
Requires basic data manipulation, data knowledge
Available to anyone with minimal expertise
Insight Access


High
Data
Literacy
Moderate
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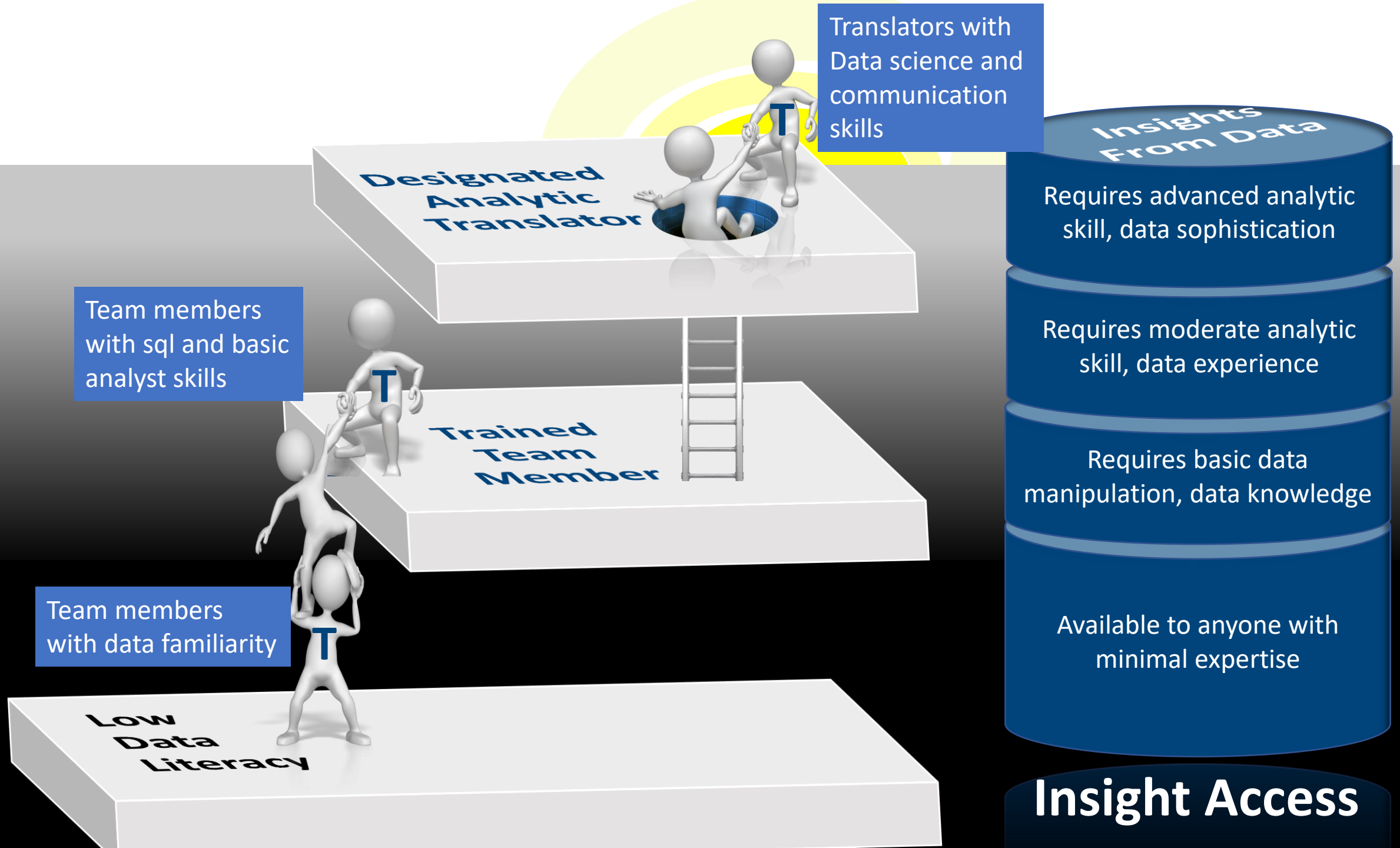
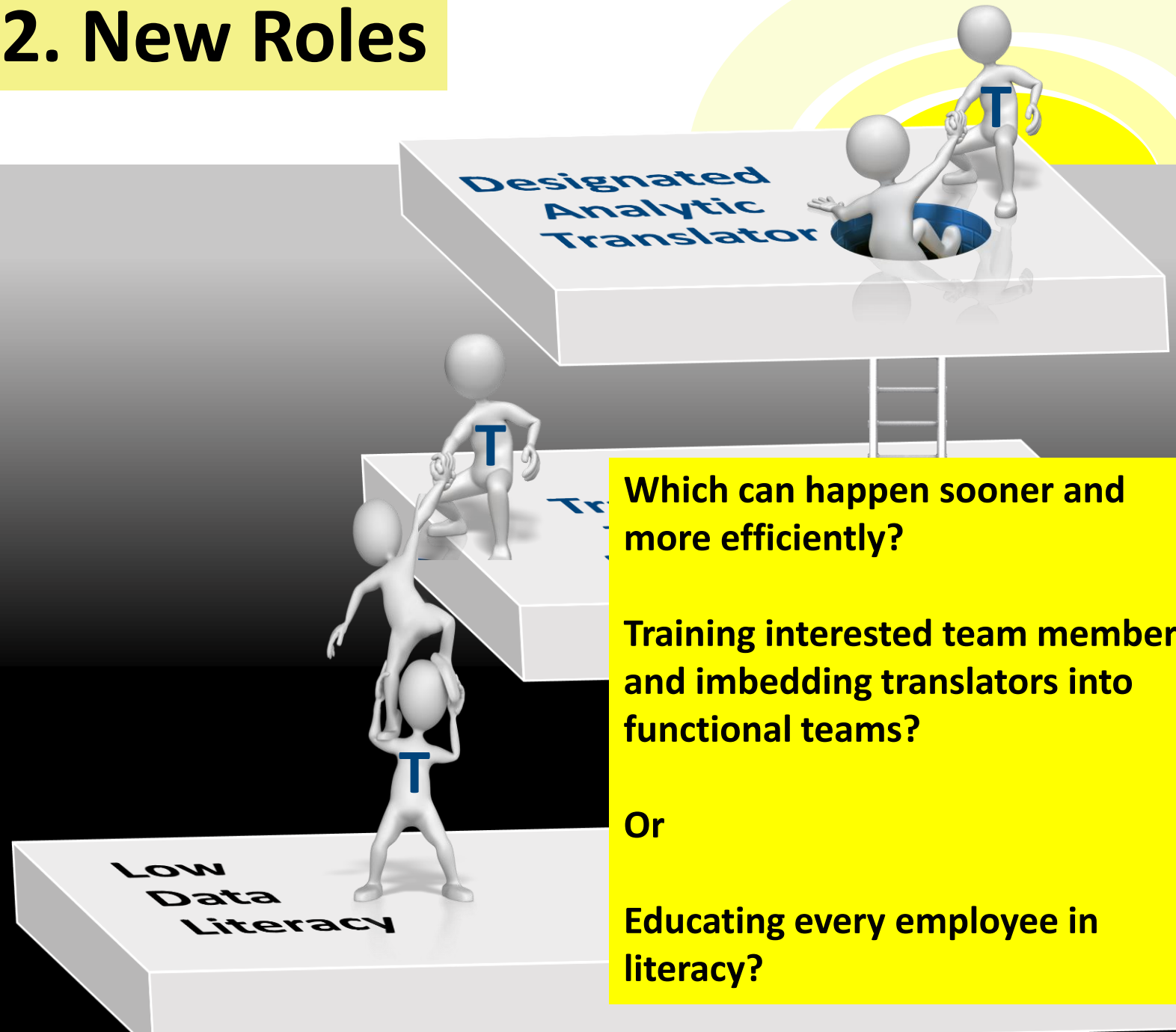

Translators with Data science and communication skills
Designated Analytic Translator
Team members with sql and basic analyst skills
Trained Team Member
Team members with data familiarity
Low Data Literacy
Insights From Data
Requires advanced analytic skill, data sophistication
Requires moderate analytic skill, data experience
Requires basic data manipulation, data knowledge
Available to anyone with minimal expertise
Insight Access

2. New Roles



Which can happen sooner and more efficiently?

Training interested team members and imbedding translators into functional teams?

Or

Educating every employee in literacy?

Until the late 1970s computers were only used by (and available to) programmers.

Computing accessibility was restricted to those with specialized training.

Democratization of computing

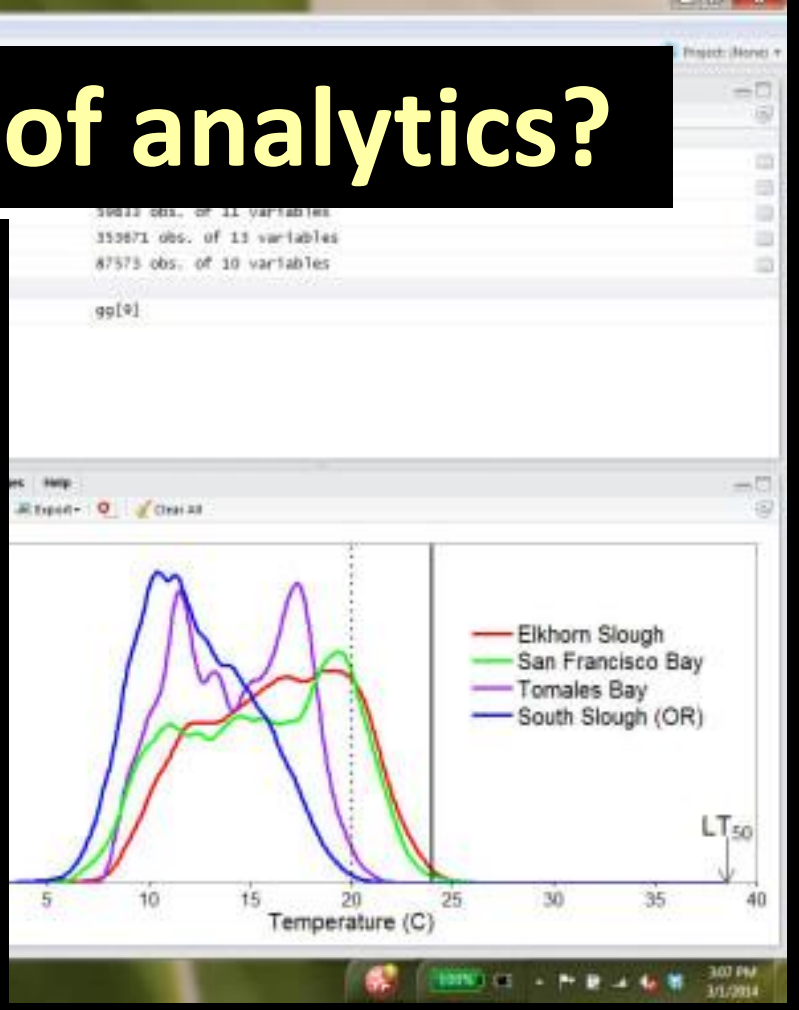
Advances in hardware, PCs, and GUI opened access to the general public.

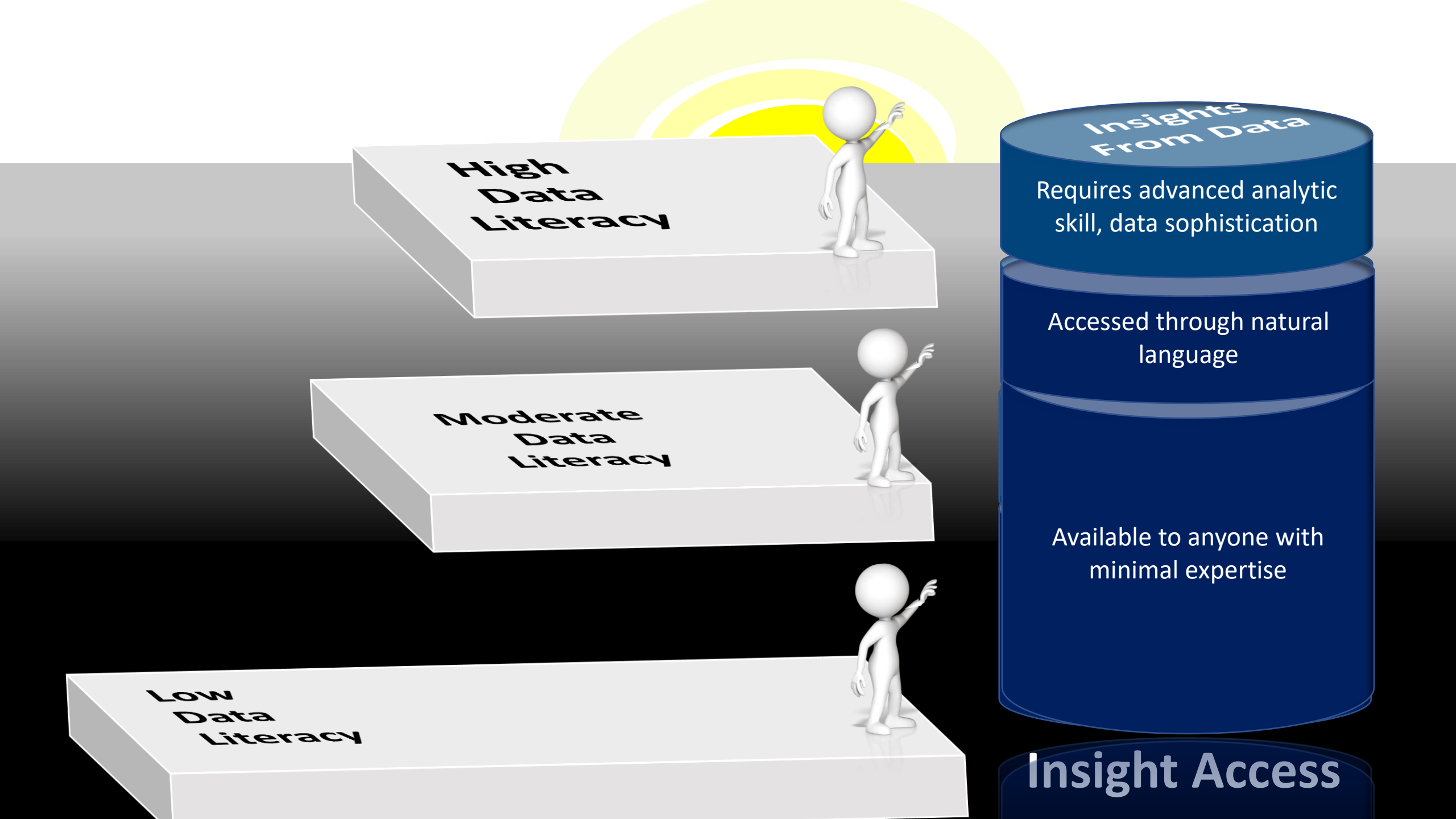
Will there be democratization of analytics?

With guidance, ML algorithms can already recognize, catalog, curate and classify data.

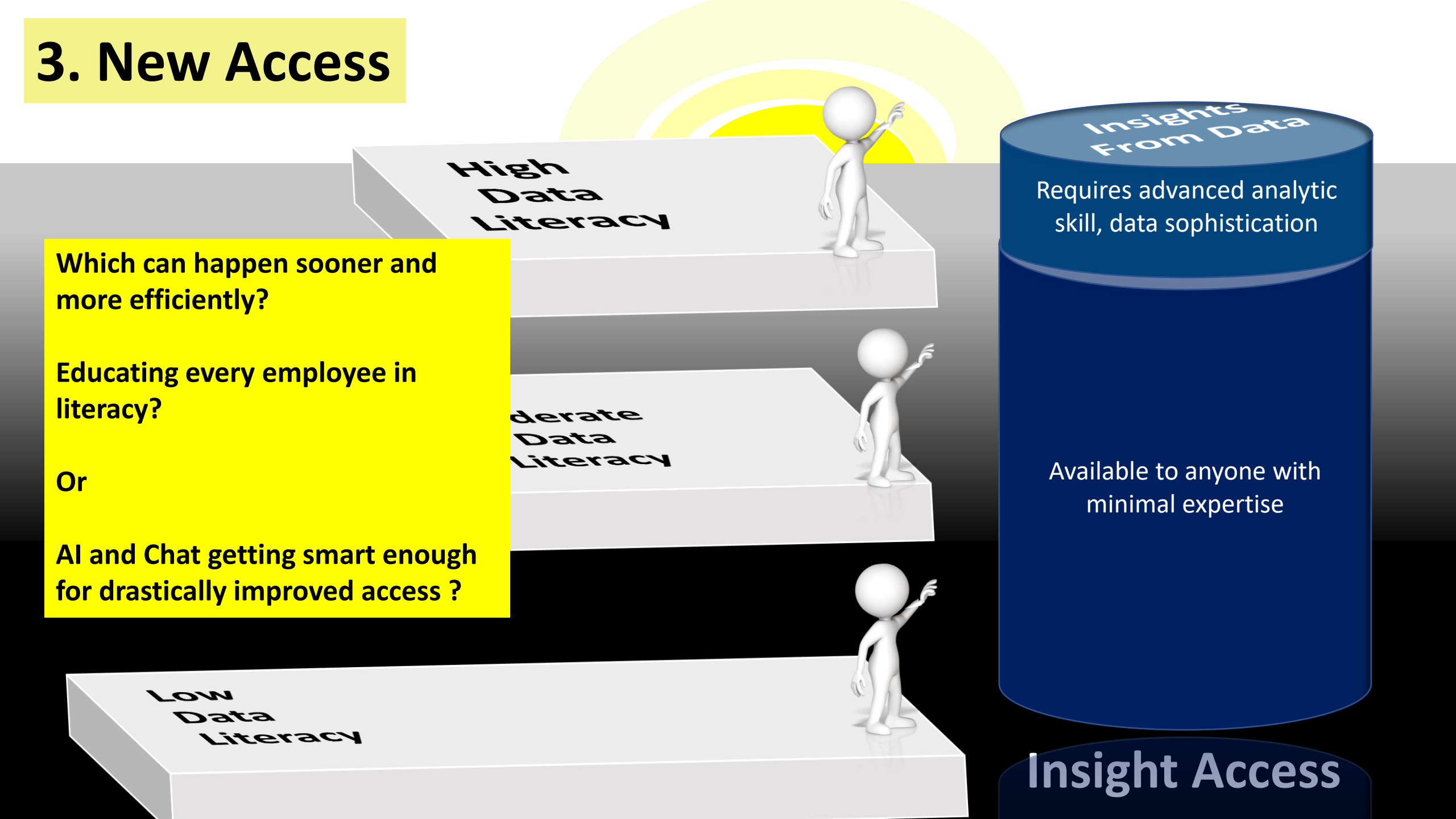
Once cataloged and connected, business rules and working definitions can be applied, with AI learning more and more data types

With NLP, CHatGPT and GPT-4 can convert spoken questions into SQL and produce graphics.




High
Data
Literacy
Moderate
Data
Literacy
Low
Data
Literacy
Insights
From Data
Requires advanced analytic skill, data sophistication
Accessed through natural language
Available to anyone with minimal expertise
Insight Access

3. New Access



Which can happen sooner and more efficiently?

Educating every employee in literacy?

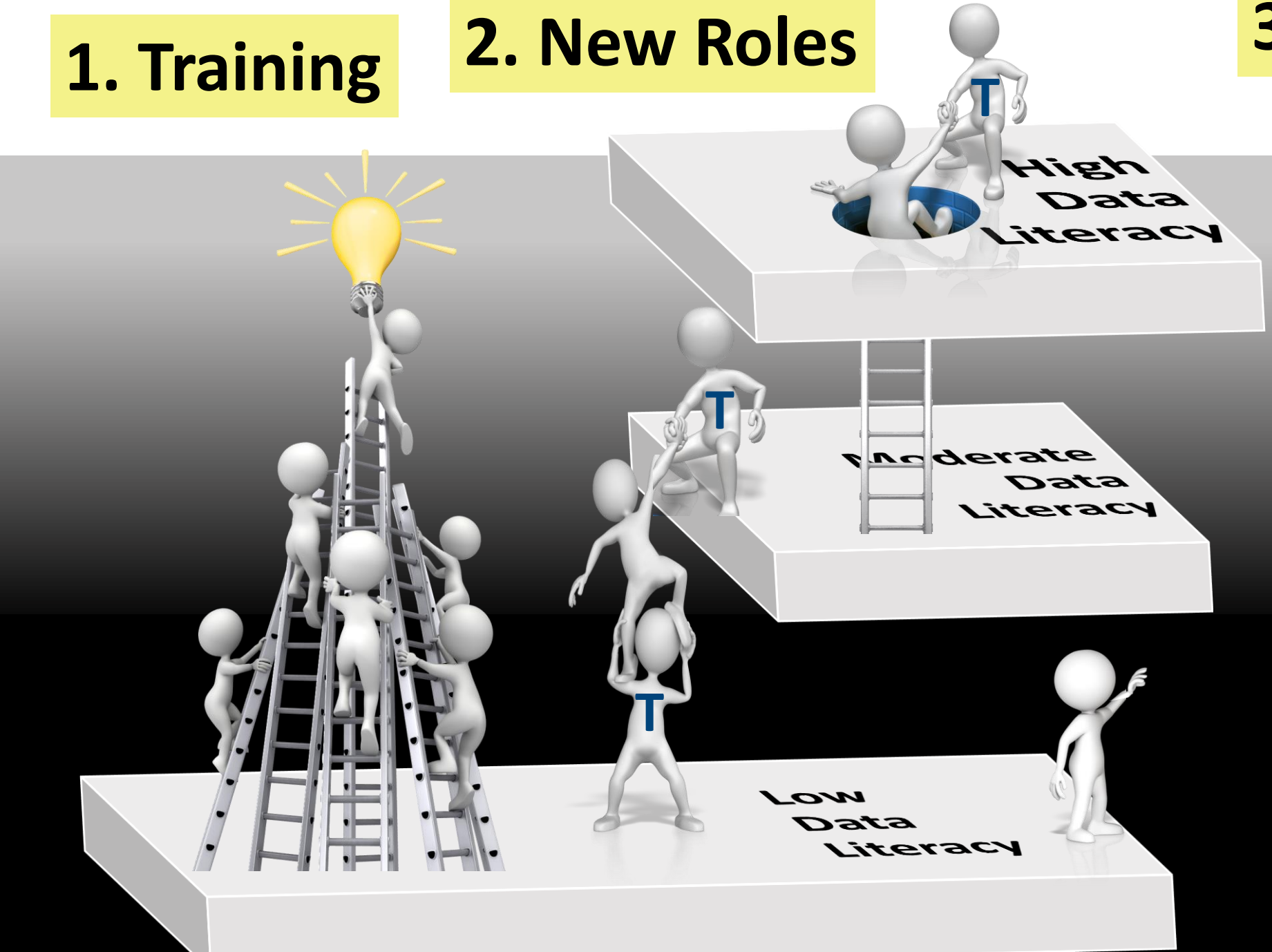
Or

AI and Chat getting smart enough for drastically improved access ?

1. Training

2. New Roles

3. New Access



Insights From Data

Requires advanced analytic skill, data sophistication

Available to anyone with minimal expertise

Insight Access

Questions?

Comments?

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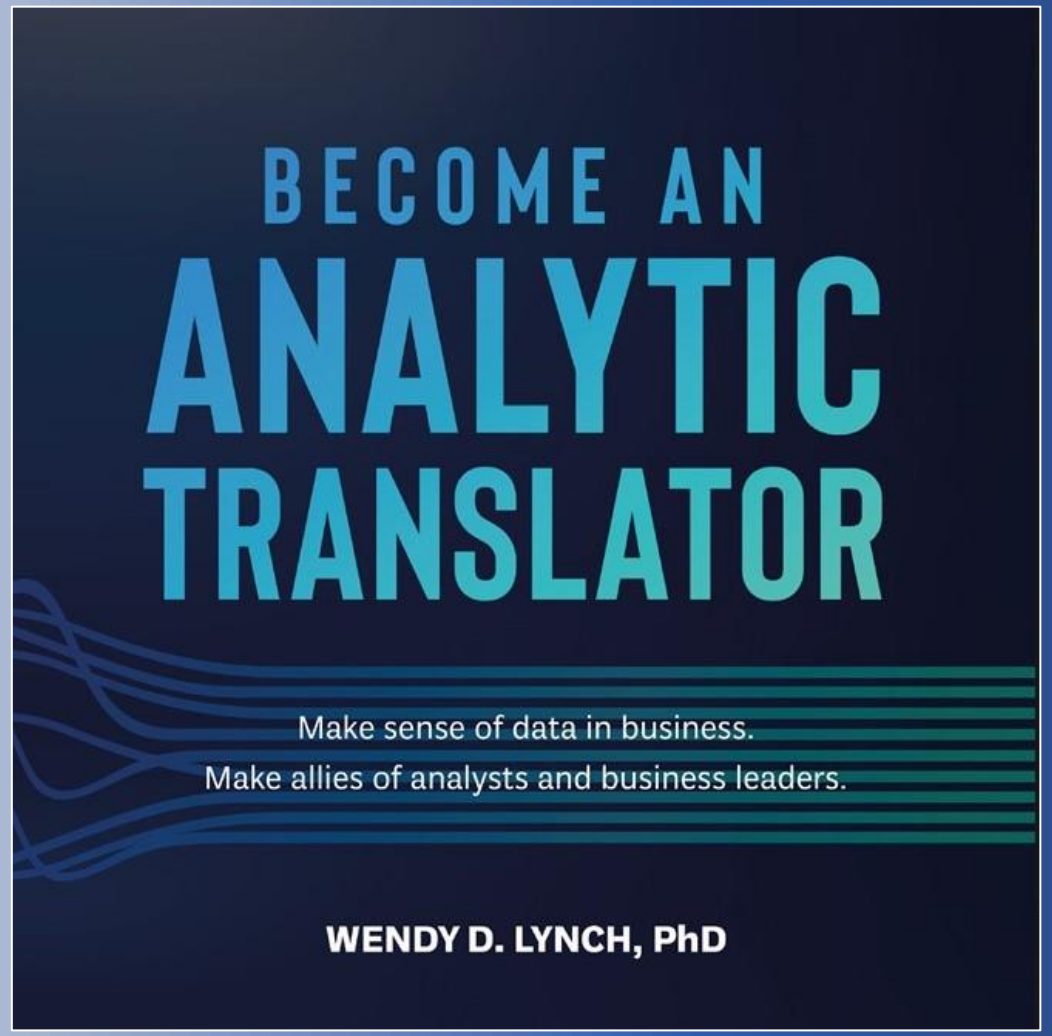
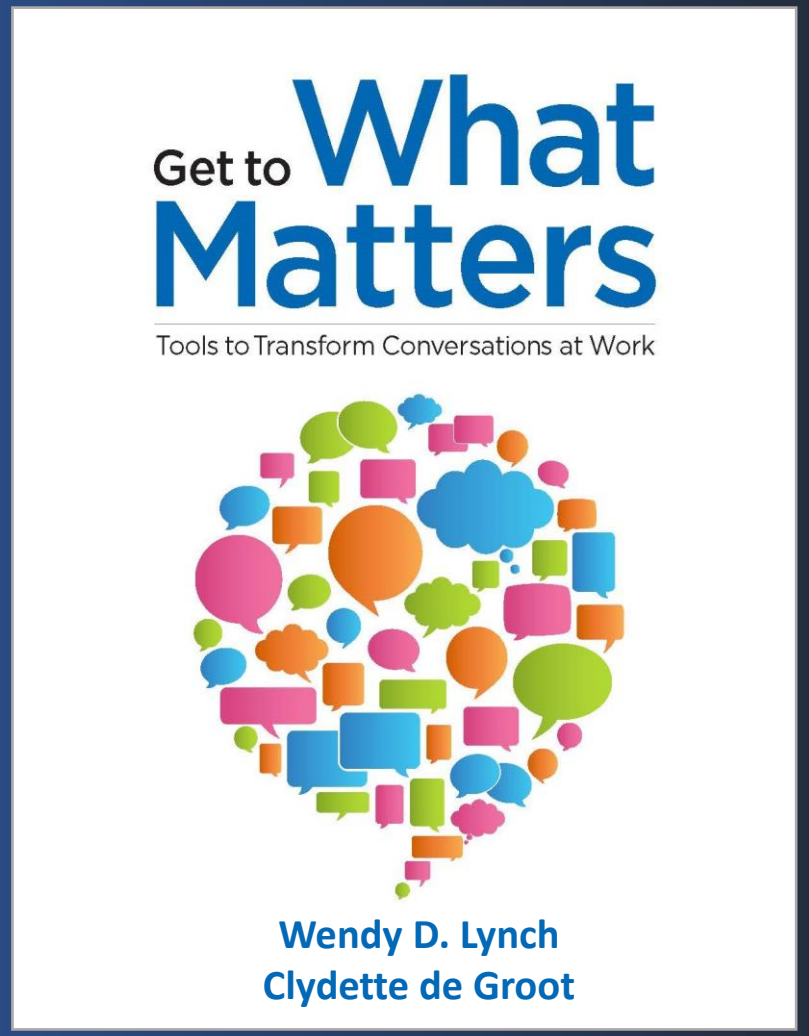

BECOME AN
ANALYTIC
TRANSLATOR
Make sense of data in business.
Make allies of analysts and business leaders.
WENDY D. LYNCH, PhD


Get to What Matters
Tools to Transform Conversations at Work
Wendy D. Lynch
Clydette de Groot