

THE SOCIAL ENGINEERING  
LANDSCAPE:  
INSIGHTS INTO THE HUMAN  
ELEMENT (HU)

# Agenda

Scientific Model

Social Engineering

The Human Element

Theory Meets the World

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Supposition – Problem Statement  
Social Engineering is a Problem

Hypothesis – Humans are the weak link  
Nature, Behavior, Attitudes,  
Habits, Education, Training

Test the Model  
Experience, Research, Outcomes

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# Social Engineering

Influence someone to surrender access or information

Means:

- Ask
  - Deceive
  - Curiosity
-

# Verizon Data Breach Report 2017

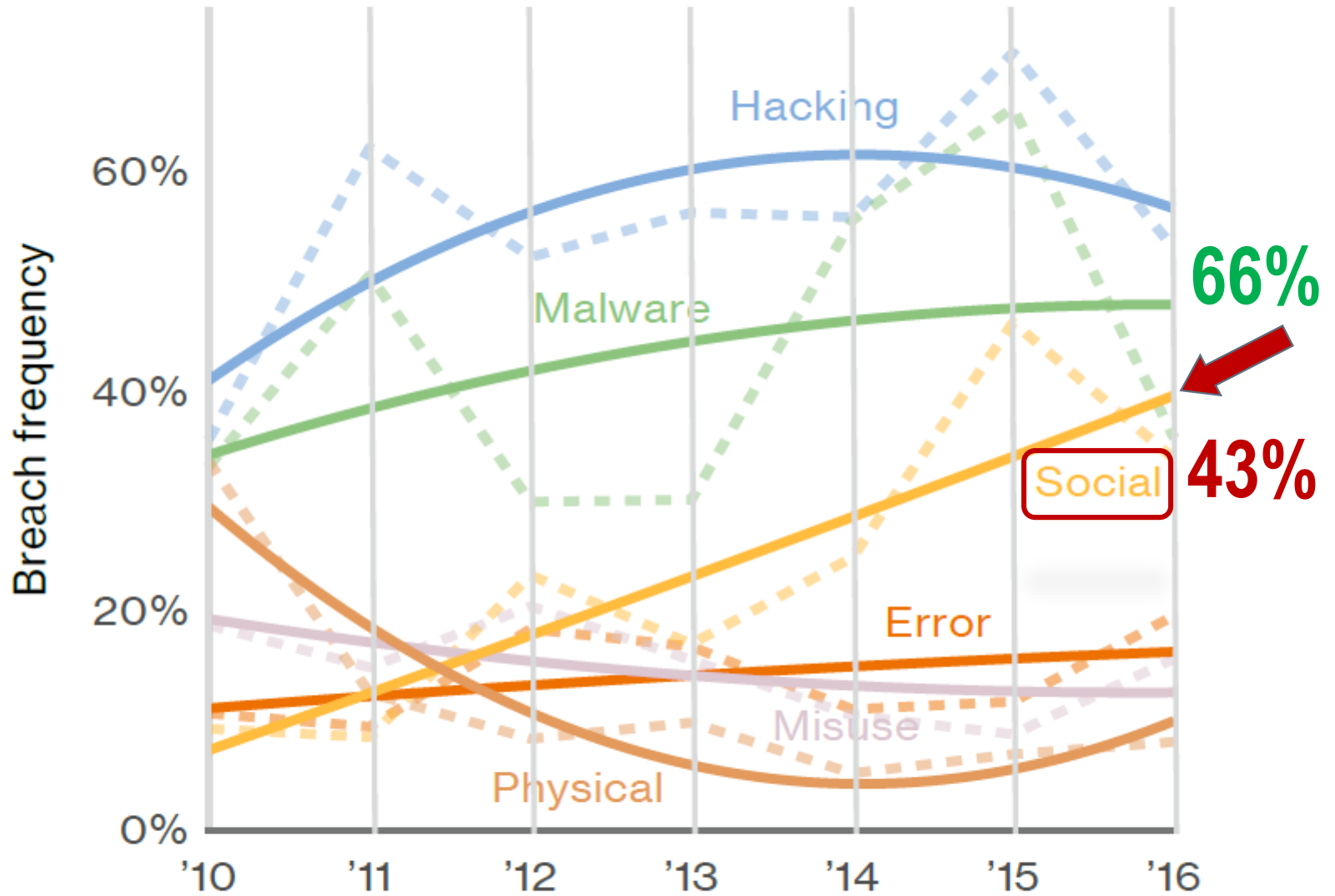
Eagerness. Distraction.  
Curiosity. Uncertainty.

All of these are drivers of human behavior, and one or more can be leveraged to influence someone to disclose information, click a link or wire money to a "vendor" account.

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# Verizon Data Breach Report 2017

Of those that had recorded instances of reporting, the percentage of users who reported was 20%.



Phishing is the most common social tactic in our dataset (93% of social incidents)

Figure 4: Percentage of breaches per threat action category over time

# Social Engineering

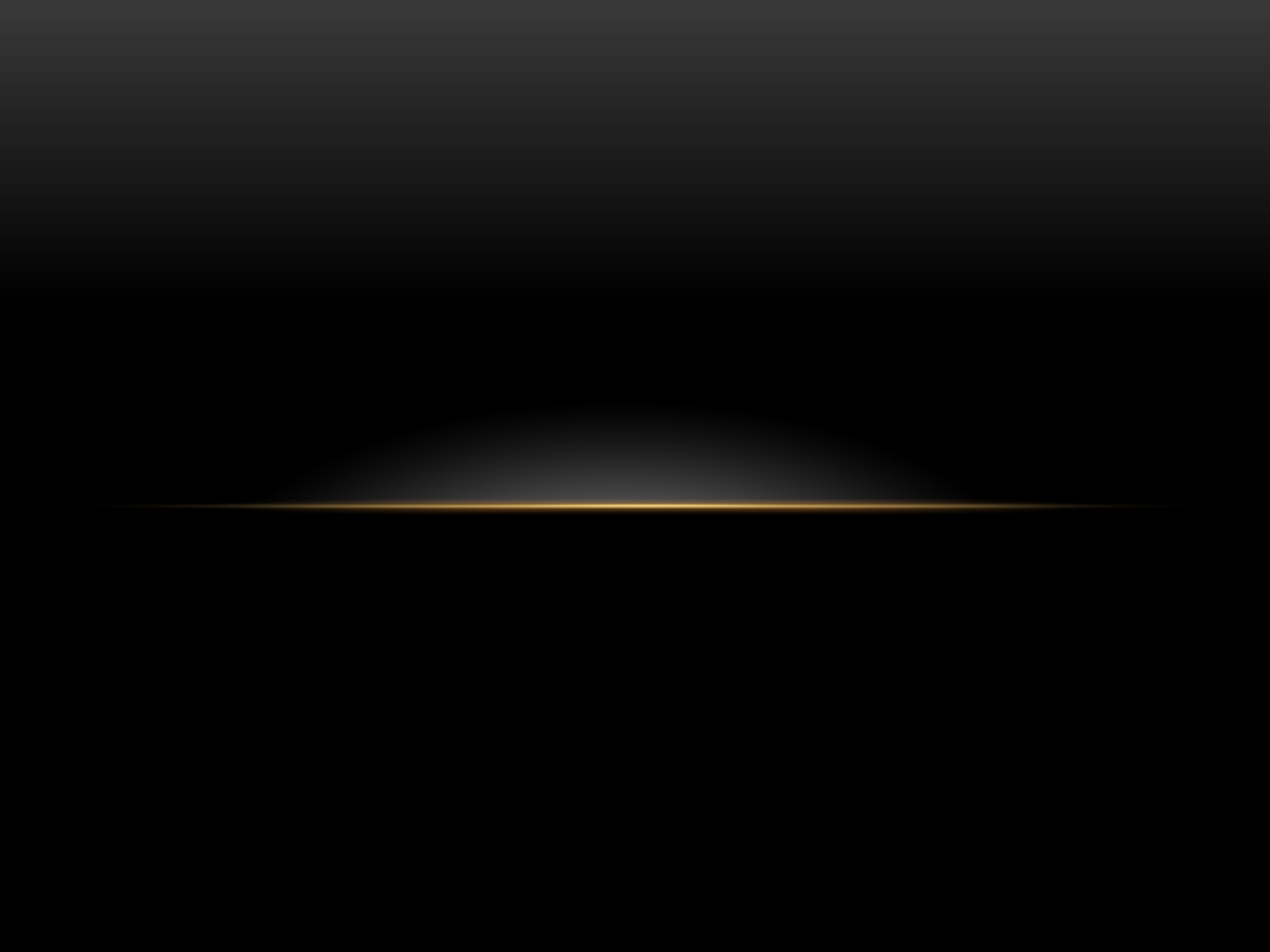
Cost to Worldwide Business:

Unknown Billions each year

Wombat, Gartner, Ponemon, FireEye...

~ \$100K - \$1.6M, per / ~ \$3.7M  
annual







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Hu

HUMAN

7E+09

# The Human Element

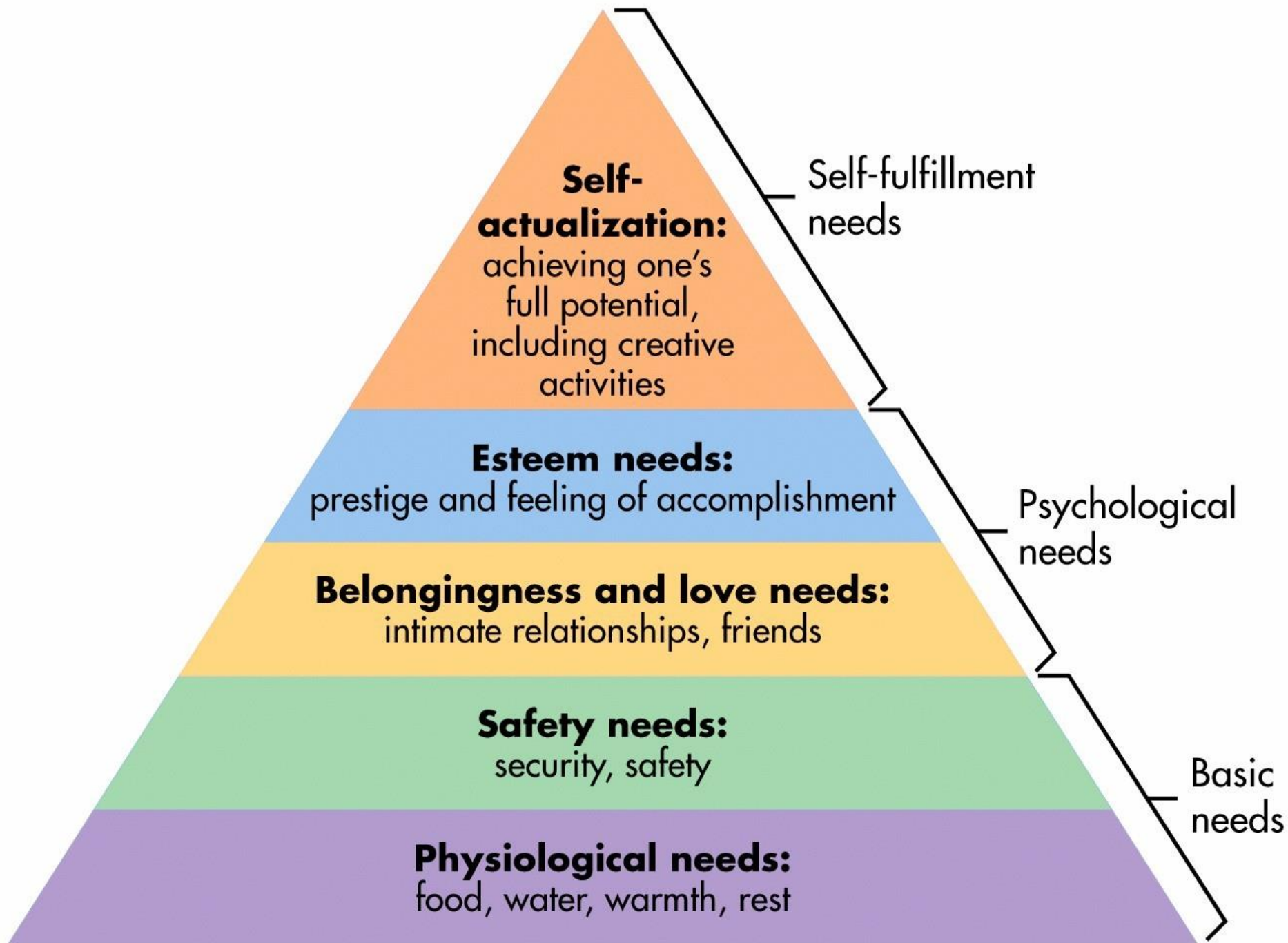
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Why is Social Engineering  
effective?

# Human Nature

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## Neuro-programming



Human Nature

Social Creatures

Relational nature of thinking

Alan Jacobs

Stress, Distraction, Apathy  
impairs higher reasoning

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# Human Nurture

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Awareness, Education

Training, Feedback

Kokcharov

Conscious competence

Drivers:

Job Resources

Personal Resources





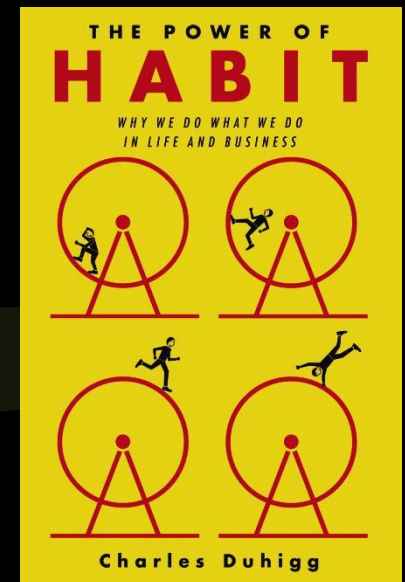
## Work Motivation: M<sup>5</sup>-model

# The Power of Habit

Learn, re-learn and **hardwire**,  
new concepts to be more efficient  
and effective.

Not adding complexity;  
reducing complexity.

Charles Duhigg



# Human Culture

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Sociology

“The bottom line is we are **not**  
**‘hardwired’** ... Our brains are  
incredibly resilient... with the  
capability, in your thoughts,  
feelings and actions, to develop in  
any direction you choose.”

Deepak Chopra and Rudolph E. Tanzi

# Work Engagement

Employees 'employ' and express themselves physically, cognitively, emotionally and mentally in their roles.

# Employee Engagement

A relationship between an employee and an organization, where an employee is fully absorbed by and enthusiastic about their work...

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# Employee Engagement

An engaged employee has a positive attitude about the organization and its values.

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# Fogg Behavior Model

**B = mat**

at the same moment

High  
Motivation

**motivation**

**triggers**

succeed here

**triggers**

fail here

**Activation  
Threshold**

Low  
Motivation

[www.BehaviorModel.org](http://www.BehaviorModel.org)

**Hard to Do**

**ability**

**Easy to Do**

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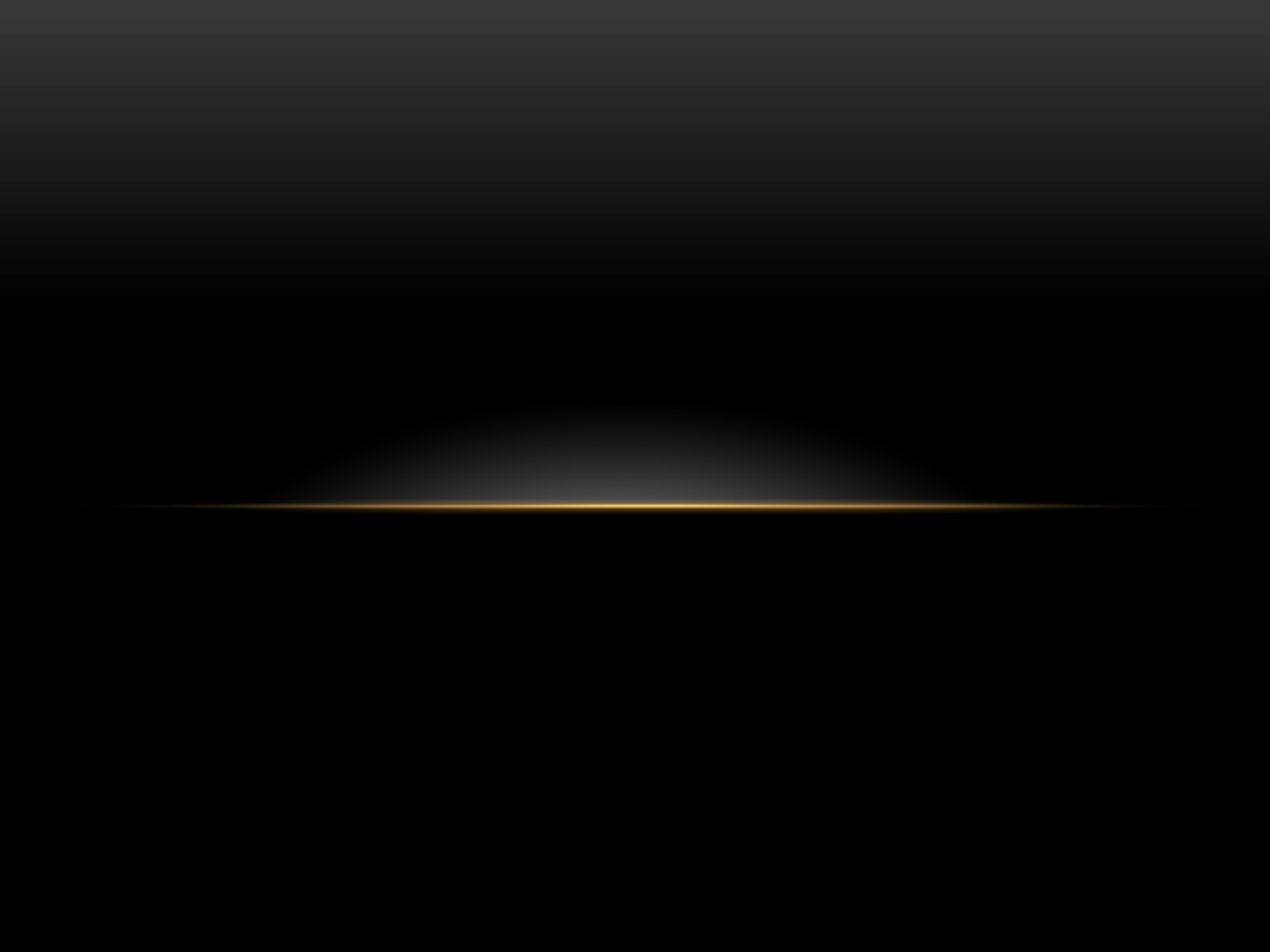
# DRiVE: The Surprising Truth About What Motivates Us

U.S. > 50 percent of employees  
are not engaged at work—and  
nearly 20 percent are actively  
disengaged.

~ \$300B yr.

~ 2%–3%

Daniel H. Pink





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HUMAN

7E+09

# The Human Element

Transparency ~~ baked in

Controls ~~ transparent

Hardwired ~~ default behavior

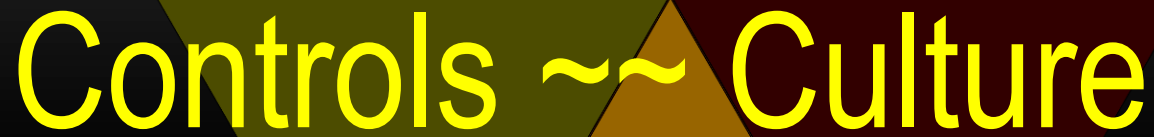
Habit ~~ discipline ~~ culture

Engagement ~~ productivity

# Transparency ~

Transparency is about trust and accountability

You can't be transparent if you don't trust and aren't trustworthy



# Controls ~ ~ Culture

“We’re going to need to move away from fear and to evidence of efficacy. ...When we do, we’re going to start getting better rapidly.”

- Adam Shostack (TNSIS)

# Hardwiring ~

Processes, behavior,  
managed change

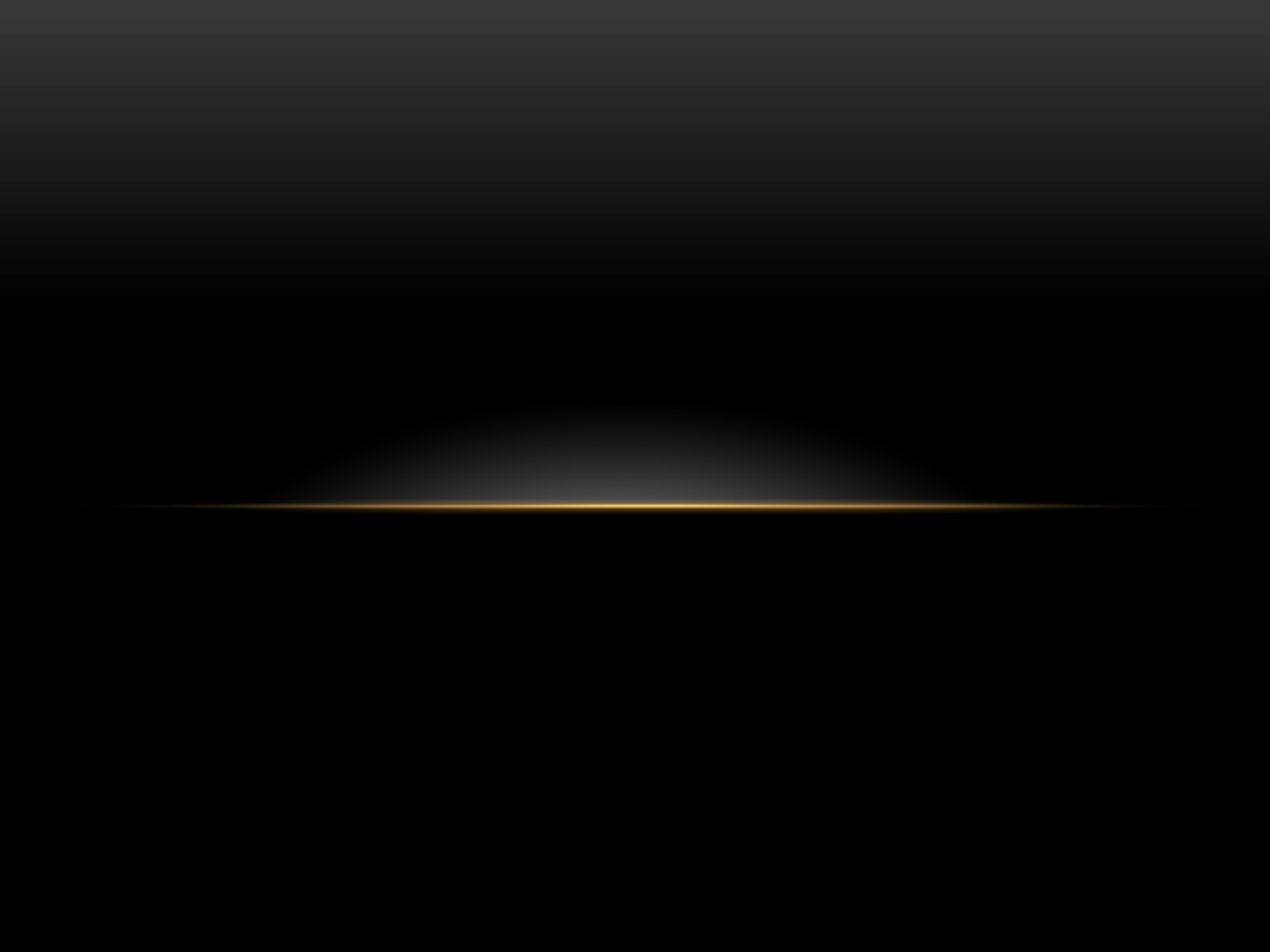
That which is not hardwired is  
ephemeral, not sustainable, not  
reliable

# Challenge Responses

- Reactive we do by default
- Proactive requires discipline
- Predictive demands talent and dedication







# The Capable Company

- Discipline around a shared mindset
- Speed of change
- Accountability
- Collaboration

Determinants of Success

# The Capable Company

A key initial goal is to identify the viruses of 'resistance to change'

Execution = people capacity + capability + discipline

Determinants of Success

# Capacity, Capabilities & Culture

- Looking for Reassurance, Clarity, Purpose, Passion, and a clear path of action
- We all want to do good.  
Some of us just don't know it, yet.

Culture: We share a leaky canoe

Theory meets  
the World

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# Employee Engagement

PSU

Kirk Kelly, CIO

- Move from 30% actively engaged to 50%-60%

# Employee Engagement

% U.S. Employees

	2013	2014	2015
Engaged	30	32	32
Non Engaged	52	51	51
Actively Disengaged	19	18	17

Gallup Q12





Autonomy



Mastery



Purpose

Desire for self-direction

Motivation for meaningful work

Yearning to serve something greater

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# DRiVE:

*The Surprising Truth About What Motivates Us*

- Control leads to compliance;  
    autonomy leads to engagement
- “Flow” generates “glorious” engagement
- Only engagement can produce mastery

Daniel H. Pink

# Employee Engagement

SWMC

Christopher Paidhrin

- Awareness In Depth
- Culture of Engagement
  - Developed over 15 years

# Awareness In Depth

- Multiple applicant screening criteria;
- Rigorous interviewing processes;
- New employee orientation;
- Conf./privacy agreements, signed/hire and each year during review;
- Policies and procedures, with appropriate use and access monitoring;
- Departmental and computer-based training (CBT);
- Annual mandatory, web-training modules, including security, privacy, use;
- Annual "MUMs the Word" campaign;
- HIPAA, confidentiality and IT security;
- And most important, a culture of caring and excellence.

# Workplace behavior

Habits

Temperament

Communication

Education

Training

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User Awareness

## DIFFERENTIATING STAFF WORKSHEET

	<b>High</b>	<b>Medium</b>	<b>Low</b>
<b>Definition</b>	Comes to work on time Good attitude Problem solves You relax when you know they are scheduled Good influence Use for peer interviews Five pillar ownership Brings solutions	Good attendance Loyal most of the time Influenced by high and low performers Want to do a good job Could just need more experience Helps manager be aware of problems	Points out problems in a negative way Positions leadership poorly Master of We/They Passive aggressive Thinks they will outlast the leader Says manager is the problem
<b>Professionalism</b>	Adheres to unit policies concerning breaks, personal phone calls, leaving the work area, and other absences from work.	Usually adheres to unit policies concerning breaks, personal phone calls, leaving the work area, and other absences from work.	Does not communicate effectively about absences from work areas. Handles personal phone calls in a manner that interferes with work. Breaks last longer than allowed.
<b>Teamwork</b>	Demonstrates high commitment to making things better for the work unit and organization as a whole.	Committed to improving performance of the work unit and organization. May require coaching to fully execute	Demonstrates little commitment to the work unit and the organization.
<b>Knowledge &amp; Competence</b>	Eager to change for the good of the organization. Strives for continuous professional development.	Invested in own professional development. May require some coaching to fully execute.	Shows little interest in improving own performance or the performance of the organization. Develops professional skills only when asked.
<b>Communication</b>	Comes to work with a positive attitude.	Usually comes to work with a positive attitude. Occasionally gets caught up in the negative attitude of others.	Comes to work with a negative attitude. Has a negative influence on the work environment.
<b>Safety Awareness</b>	Demonstrates the behaviors of safety awareness in all aspects of work.	Demonstrates the behaviors of safety awareness in all aspects of work.	Performs work with little regard to the behaviors of safety awareness.

## High Medium Low Behavior Grid

<p>Loyalty</p> <p>Good communicator</p> <p>Team worker</p> <p>Safety aware</p> <p>Resistant to change</p> <p>Timely</p>	<p>Integrity – Responsible - Accountable</p> <p>Respectful</p> <p>Engaged</p> <p>Good attitude</p> <p>Customer-focused</p> <p>Makes a difference</p> <p>Aligned behavior</p> <p>Problem solves</p> <p>Self-motivated</p> <p>Resourceful</p>
<p>Inconsistent work effort</p> <p>Poor communicator</p> <p>Lack of skills</p> <p>Unresponsive</p> <p>Complains</p> <p>Disengaged</p> <p>Reluctance to step up</p> <p>Selfish - Disrespectful</p> <p>Passive aggressive</p>	<p>Capable</p> <p>Adaptive</p> <p>Transparent</p> <p>Rounding – Follow-up</p>

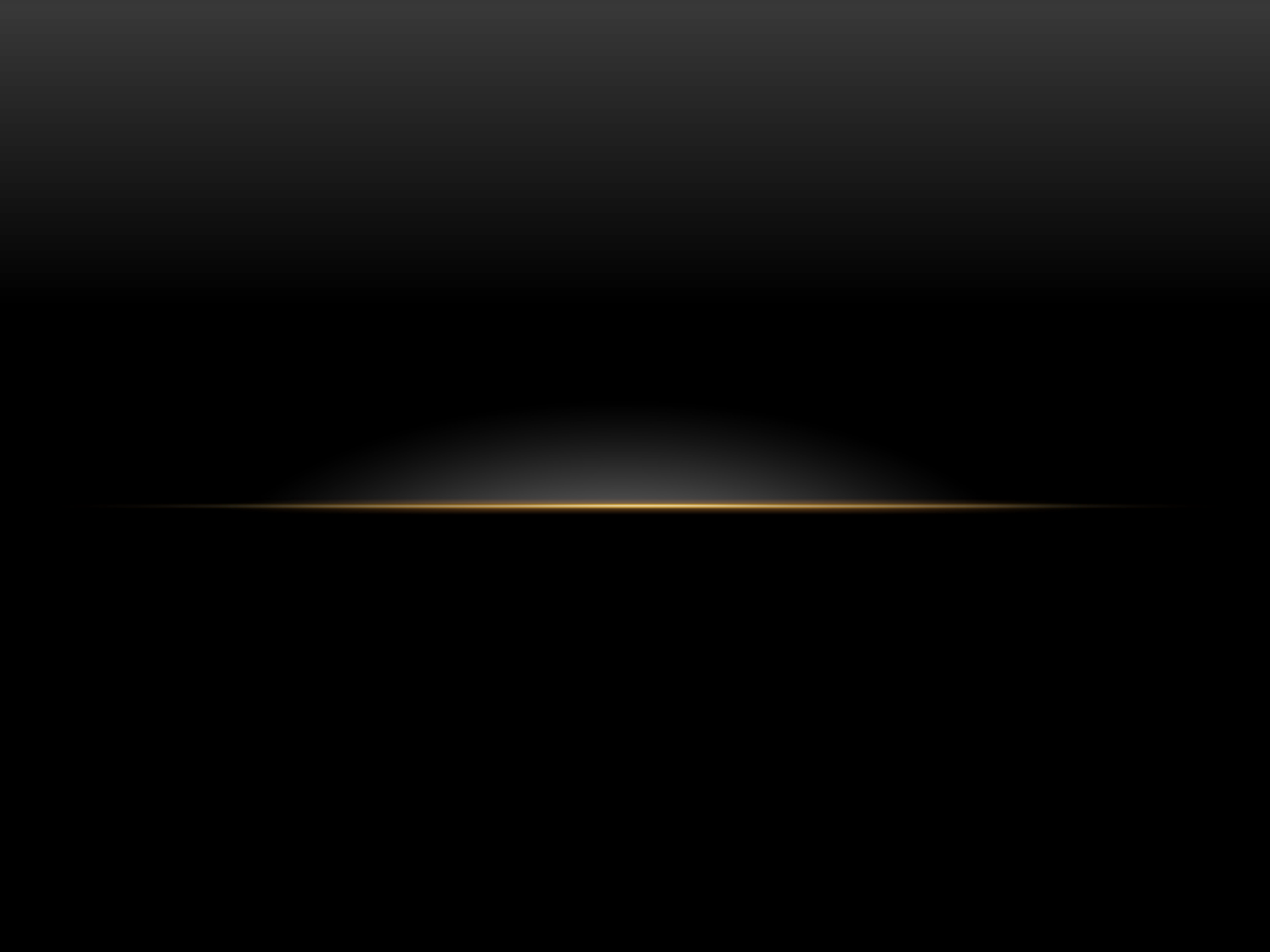
### Strengths:

- \* respectful – kind, courteous, generous, helpful, supportive, responsive, positive attitude
- \* engaged – curious and motivated to better their services and skills, exceeds expectations
- \* customer-centric attention – concern, compassion, aware of their needs, a good listener and communicator
- \* resourcefulness – solution and outcome-focused, team-leveraging capabilities, thinker
- \* adaptive – flexible, agile, responsive,
- \* long-term vision and goals – maturity and discipline in work effort, learning, planning, time management
- \* integrity – honest, ethical, hard working, responsible (reliable), timely (punctuality & delivery of services)
- \* capable – skills, knowledge, reasoning & analytical, interpersonal and team skills, self-motivated, safety-aware

### Weaknesses:

- \* selfish – disrespectful of others, organization, work, mission, attitudinal (negative)
- \* poor communication skills – poor: listening, follow-up, forgetful, combative, defensive, critical, judgmental
- \* disengaged – bored, not motivated, avoids responsibilities, self-deceptive, self-absorbed
- \* unresponsive – inattentive to customer needs and feelings, priorities, promises, and deadlines
- \* resistant to change – unwilling to learn, grow, adapt, improve service
- \* lack of capability and capacity – underperform, unaccountable, inattentive to commitments and tasks

Modified ~ High-Medium-Low





# Behavior Change ~ Decision Making

Choice not Fear

~ Motivation by empowerment  
Belief in “capacity”  
to see a path forward

Thomas Goetz

# Behavior Hardwiring

- Personalized Information
- In “context”
- Options, benefits, choices
- Connected to “action”

“Engagement is totally different from compliance.”

Thomas Goetz

# Next-Gen E-Learning

- Capacity is increased by retrieval practice, over time
- Deep encoding takes “effort”
- Linked associations
- Multi-tasking doesn't work

Most training ~ lost immediately

Dr. Alice Kim

# Liars and Outliers:

*Enabling the Trust that Society Needs to Thrive*

- Moral Pressure
- Reputational Pressure
- Institutional Pressure
- Security Systems

“...you really need to have all four in action to be effective in creating a certain behaviour in your “society”.

**Bruce Schneier**

# The Power of Habit

Learn, re-learn and **hardwire**,  
new concepts to be more efficient  
and effective.

Not adding complexity;  
reducing complexity.

---

Charles Duhigg

**Cues** initiate the habit. **Routines** basically are the habit. **Rewards** are the positive things that happen after you execute the routine.



**Charles Duhigg**

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