



Transforming Internal Audit Using New Technologies

Internal Audit in a Disruptive Environment

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Lessons from Africa – matatus vs auditors



TECHNOLOGY ADOPTION CURVE

Everett Rogers – Diffusion of Innovations 1962



7 Dimensions for measuring technology adoption in Internal Audit

1. **Audit objective**—The scope of audit undertaken by CA systems
2. **Audit approach**—The extent to which audit outputs shift from periodic to continuous
3. **Data access**—The level of access of internal auditors to the firm's data systems
4. **Audit automation**—The degree to which audit processes are automated
5. **Audit and management overlap**—The extent to which internal auditors rely on IT systems intended for use
6. **Management of audit function**—The organizational relationship among IT internal audit, finance audit and other compliance departments
7. **Analytic methods**—The degree of technical sophistication of

Barriers to technology adoption



The Five Dysfunctions of a Team



San Francisco: Jossey-Bass (2002).
by Patrick Lencioni

Dysfunction one: An absence of trust among team members.

– (resulting problem: invulnerability)

2. Dysfunction two: Fear of conflict.

-- (resulting problem: artificial harmony)

3. Dysfunction three: Lack of commitment.

-- (resulting problem: ambiguity)

4. Dysfunction four: An avoidance of accountability.

-- (resulting problem: low standards)

5. Dysfunction five: Inattention to results.

-- (resulting problem: status and ego)

Technology domains – why you need to act



Organisations/Businesses

Business is being disrupted and needs to become more efficient with innovative products

Auditor is

- trusted advisor
- Assurance provider

Audit Profession

Audit domain is being disrupted.

- Data analysis underpins AI
- Routine tasks automated
- Adoption of AI improves accuracy and scale
- Best practice –ECM & CA

Global Trends

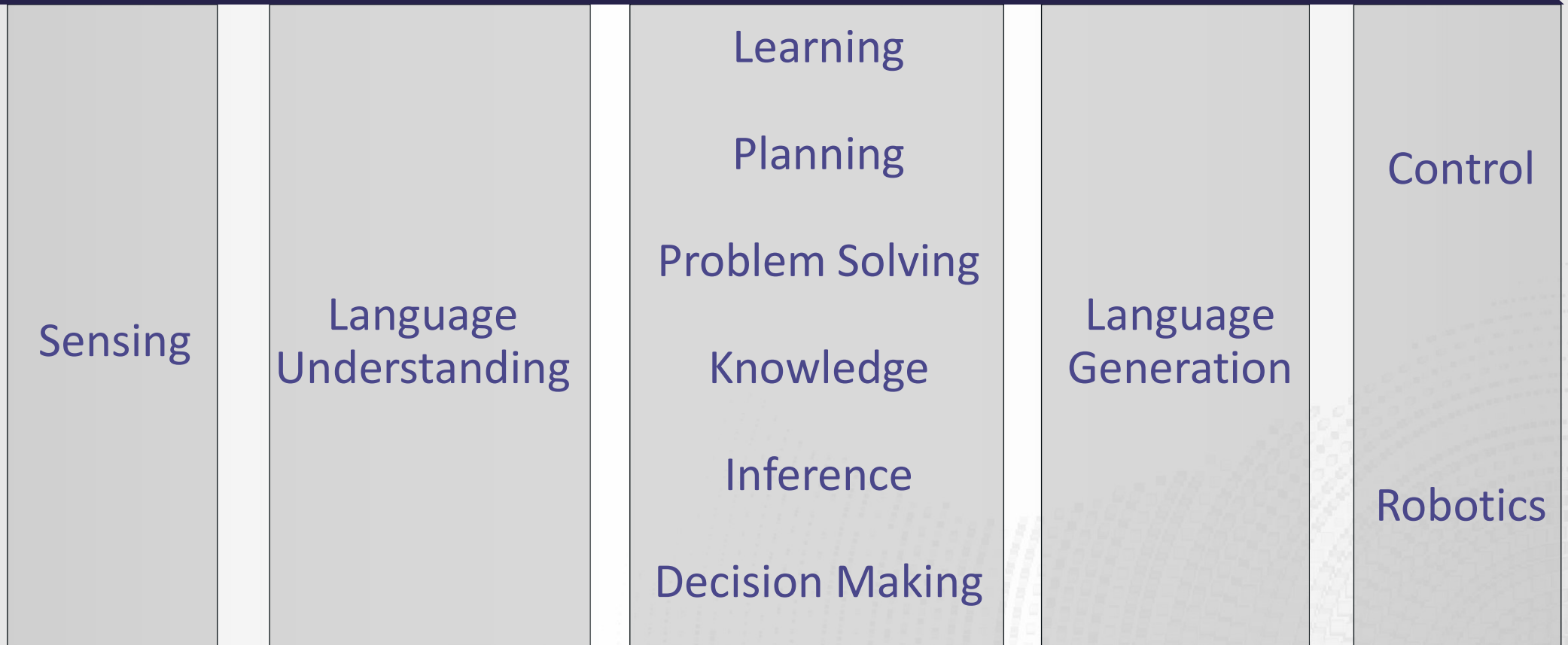
1. Fourth Industrial revolution
2. Data - is the key to the future
3. Know your clients so you can service what they actually want, when they want it, how they want it.
4. If you don't adapt, someone else will
5. Business models are being disrupted

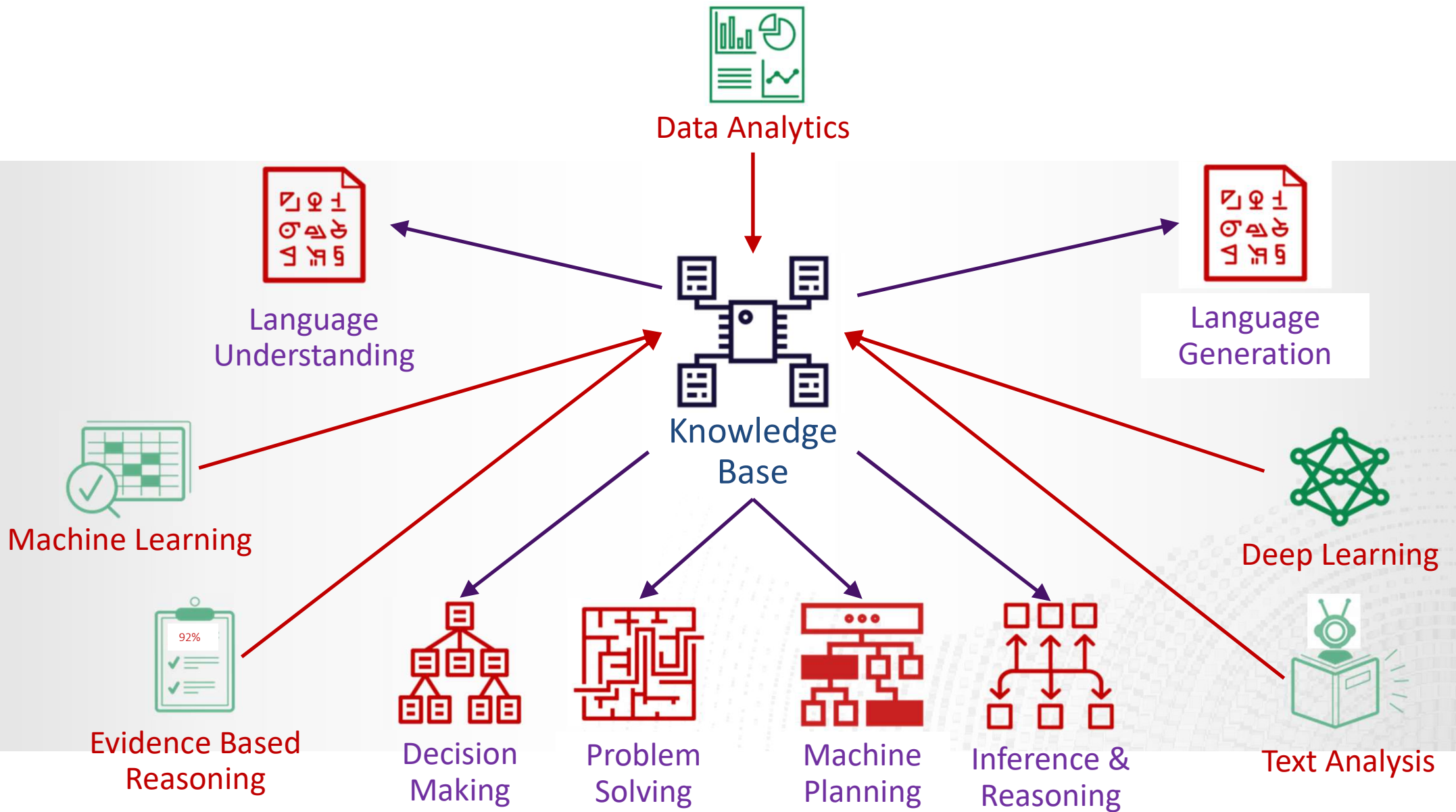
Enablers of the Data Analytics Revolution



1. Artificial Intelligence (AI)
2. Natural Language Processing
3. Information as a corporate asset
4. Smart devices that produce and consume IoT data
5. Platform and Stack more accessible
6. Cloud enabled democratisation
7. Trust – digital ethics frameworks

Tasks of Intelligence





Motivation for new approaches



1. What questions are you already asking that could have better answers?
2. What question would make your organization more competitive if you could answer it?
3. How can you create magic for your customers?
4. Where are you spending lots of time gathering or analyzing information?
5. Do you wish you could clone your top performers?

Data Science



- “The science and engineering of making intelligent machines, especially intelligent computer programs”.
- Intelligence distinguishes us from everything in the world.
- How about consciousness?
- Making computers understand, apply knowledge.
- Also, improve skills - significant role in our evolution.

Requirements for Career in AI



- Various levels of math, including probability, statistics, algebra, calculus, logic, and algorithms.
- Bayesian networking or graphical modelling, including neural nets.
- Physics, engineering, and robotics.
- Computer science, programming languages, and coding.
- Cognitive science theory.
- Read more about programming languages: [R](#), [Machine Learning](#)

Staying relevant to the AI revolution:



- a. Keep a finger on the pulse**
- b. Piggyback on the innovators**
- c. Brainstorm potential uses with your team**
- d. Start small and focus on creating real value**
- e. Prepare the ground**
- f. Collaborate – functional teams**

Staying relevant to the AI revolution:



Structure Projects in Stages to Convince Stakeholders

Staying relevant to the AI revolution:



Business Data Can Be Messy

Staying relevant to the AI revolution:



Start with Available Data & Solvable Problems

Staying relevant to the AI revolution:



Don't Overlook Older Tools

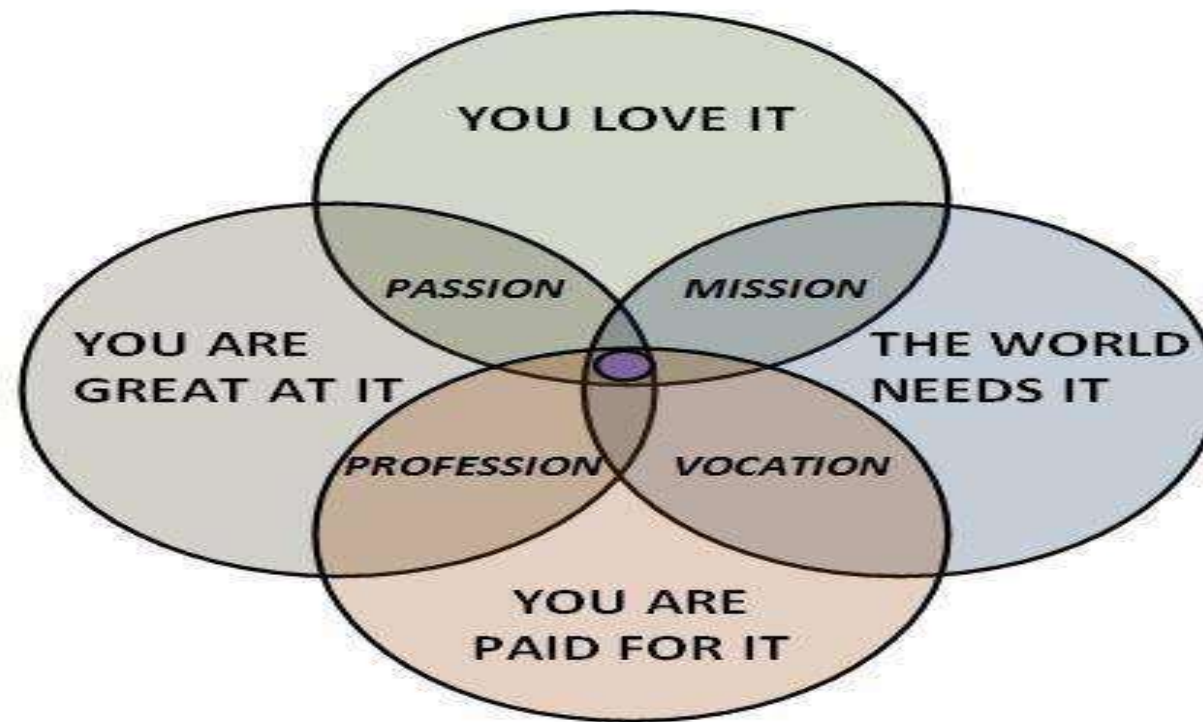
Staying relevant to the AI revolution:



AI & ML Transformation Is Just Beginning

Matatu driver or auditor?

PURPOSE CHART



 PURPOSE

Q & A