

# Human centred AI:

Approaches, risks, KPIs and best practices for successful implementation

**Amit Kar**

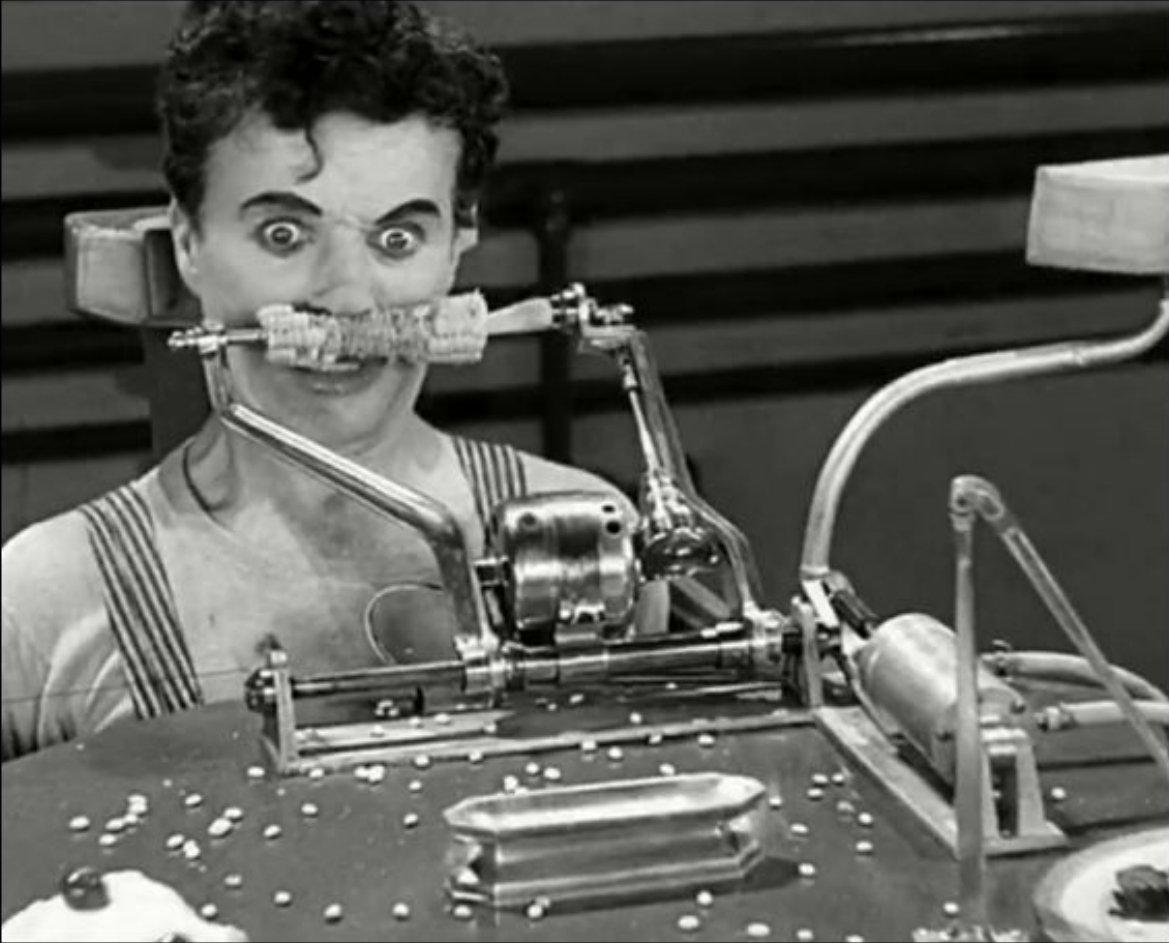
Digital Solutions Leader – Energies & Chemicals  
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# Modern Times: Our Contentious Relationship with Technology



# Artificial Intelligence: **Redeploy Human Intelligence – but how?**



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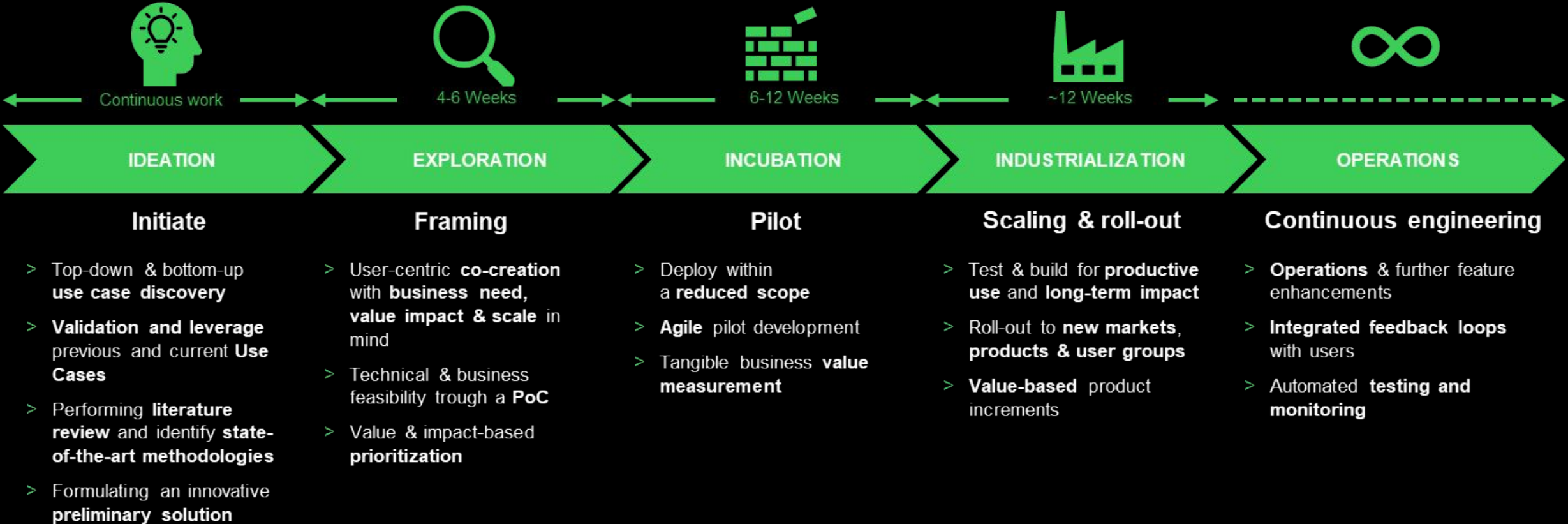
Follow

You know what the biggest problem with pushing all-things-AI is? Wrong direction. I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes.

# Strategy: Identifying a successful I Human-centric approach

- **Targeted:** Focused on well-defined use case
- **Response Time:** choose a use case that will produce attributable results immediately
- **Quantifiable:** choose a situation in which the impact of Ai is measurable
- **Prioritizes Human Intelligence:** design an implementation with input from human operator, and which keeps them in control (for now), leveraging their experience (supervisory) – but which eases a human constraint
- **Manages Risk/Safety:** implementation clearly avoids increasing risk to people or assets
- **Utilizes Data Effectively:** exploits trustworthy (complete, reliable quality, timely) structured and unstructured data (data utilization enabled through sound data governance)

# Ai Implementation Process: SE Ai Hub Approach



# Example: Energy and Maintenance Optimization; Reverse Osmosis

## Business Challenge

### Customer Needs

- **Minimize OPEX:** Reduce energy consumption in the desalination plant and maximize lifespan of RO membranes
- **Minimal disruption to operations:** Maintain existing operational set points
- Ensure the **efficiency and longevity** of the RO membranes

### Value Proposition

Our AI solution **optimizes the clean-in-place planning** for RO membranes, delivering significant **energy savings, operational efficiency,** and **sustainable performance** without altering operational set points.

## Our Solution

### Approach

- Built machine learning model to accurately represent RO system energy consumption
- Optimized the plant's cleaning plan for the upcoming year to minimize overall energy consumption

### Results

- ✓ Annual savings of **1-3%** specific energy for each RO skid and same water production
- ✓ Patent pending

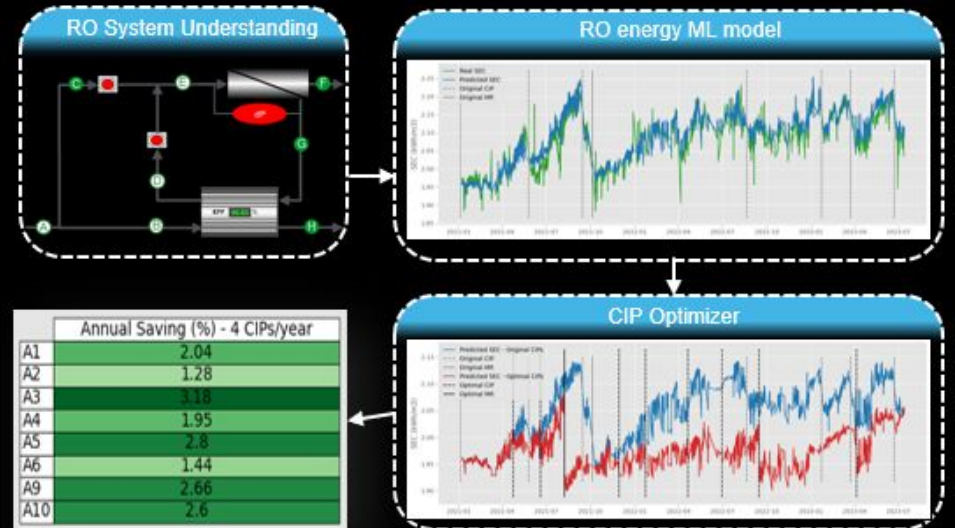


**Client:**  
Reverse Osmosis  
Desalination Plant

**Size:**  
400k m<sup>3</sup>/day

**Location:**  
Middle East

## Approach



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# Example: Co-Simulation of Power & Process; Energy Efficiency

## Why this matters

10-20% of the unplanned SD are caused by electrical problems

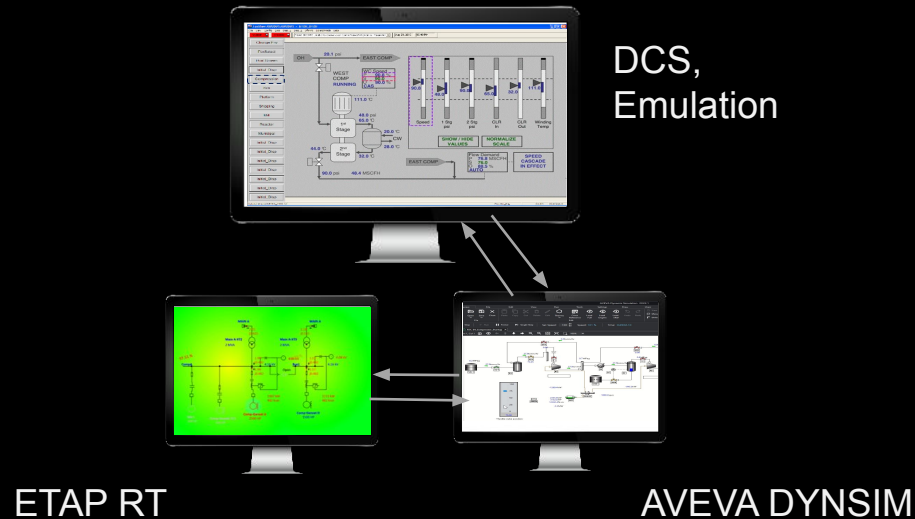
Every electrical model does not take into account the of the process load

Power Dynamic Modelling usually based on stale / designed conditions the current operating conditions



## Our solution and How we can help

Modelling the increase (or Decrease) of Electrical Load effects driven by Requirement with integrated dynamic process and electrical study



## Our proven impact

Energy- Efficiency Study Services / Deployment e.g: Improving Objective Functions:

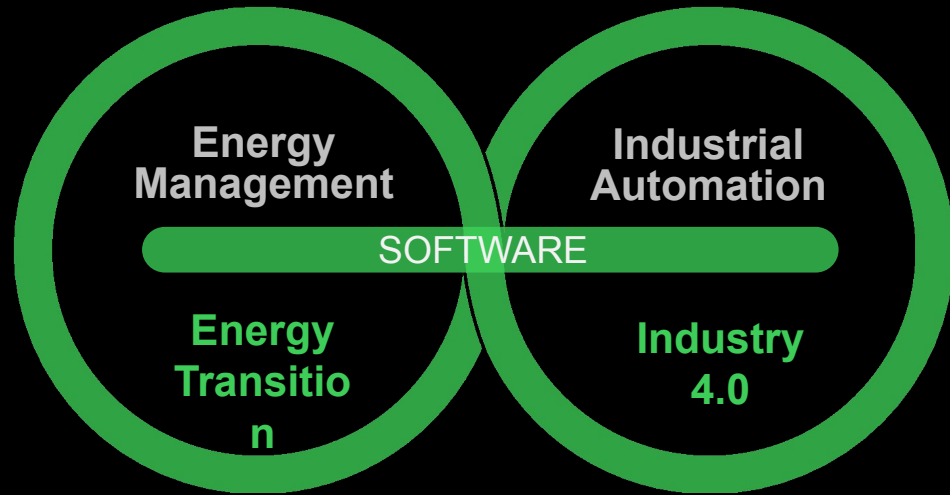
Uptime Improvement, e.g: Evaluating all operating conditions and electrical responses; enriched situational awareness



## Distinctive Technology

Proven market leaders; innovative solution agnostic of DCS and EMCS vendor

# Integrated Simulation: Driving Advanced Digital Capabilities

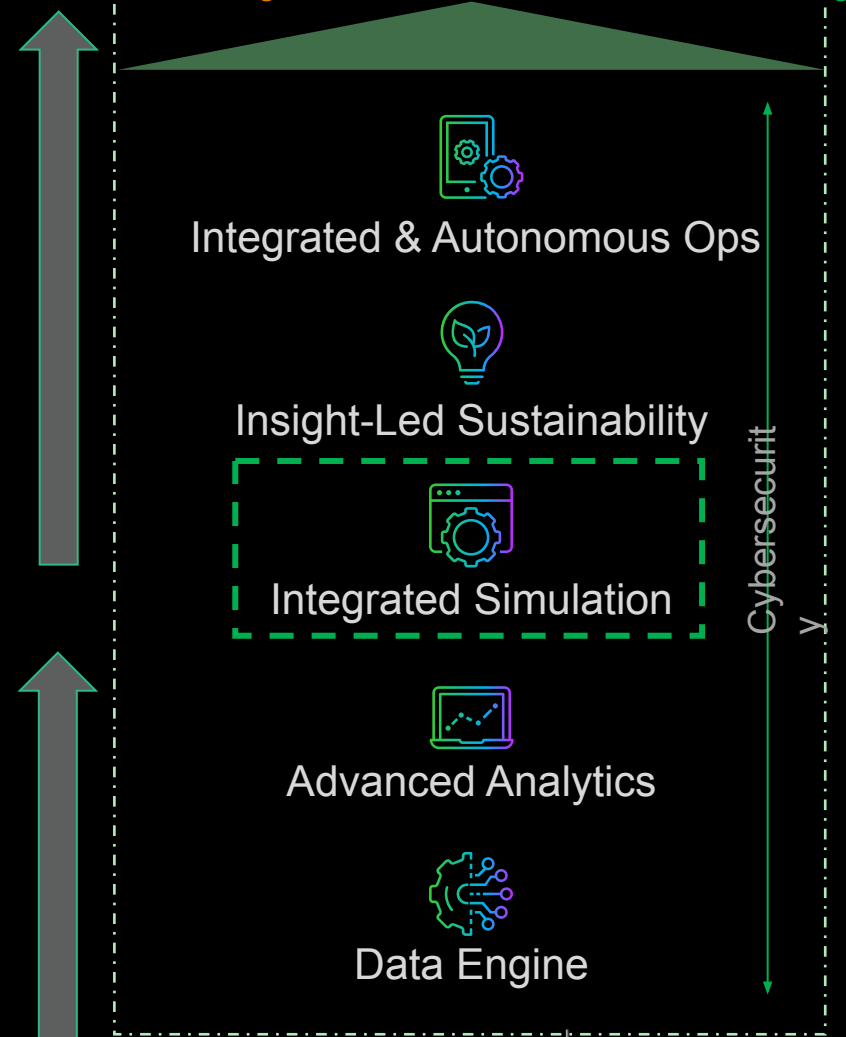


Advanced capabilities required to meet demands of the new Industrial Age; most customers not yet ready for these – with a few in the very early stages of developing these.

Fundamental capabilities necessary for the Digitalization journey; widely acknowledged and largely being addressed today with varying success


Efficiency

Sustainability



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Our purpose is to empower all to  
make the most of our energy and resources  
bridging progress and sustainability for all.

At Schneider, we call this **Life Is On.**

Our mission is to be **your digital partner for  
Sustainability and Efficiency.**

**A global industrial  
technology leader  
in electrification,  
automation  
and digitization**

**Unprecedented partner network**

>1 million partners

**ESG champion**

and sustainability partner

**Multi-hub model**

160k employees

**World-leading portfolio**

with increased digital footprint

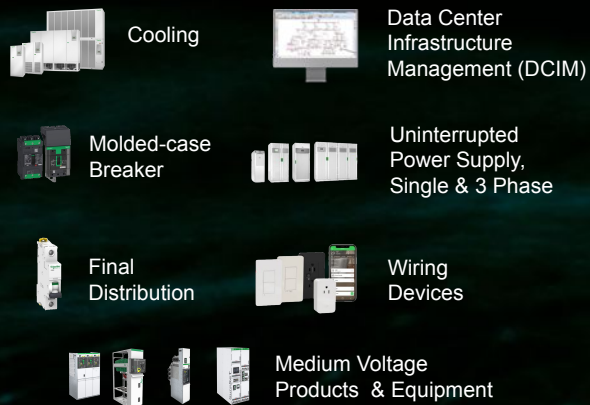
**€36bn**

revenues<sup>1</sup>

1. Full year 2023

# Electrical & Automation technologies are converging with Software, Services & Sustainability as enablers for rapid acceleration

## Energy Management



## Software, Services & Sustainability



## Industrial Automation



## DATA CENTERS



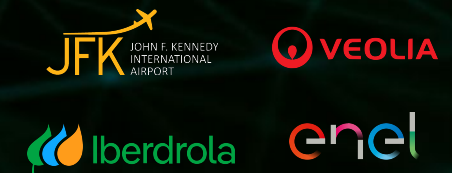
## BUILDINGS



## INDUSTRY



## INFRASTRUCTURE



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