



STS AIChE

**Third Friday Professional
Development Webinar**

***How To Successfully Create A
Digital Transformation Roadmap***

April 16, 2021



Speaker – Justin V. Conroy



Roles

Materials Capability Engineer
Process Safety Engineer
Project Manager
Product Manager
Technical Manager / Account Manager
Program Manager / Account Manager
General Manager / Senior Account Manager



Companies

Kimberly-Clark (2008)
Siemens Energy (2010 – 2015)
Radix Engineering and Software (2015 – Present)

Education

Bachelors of Chemical Engineering –
University of Houston

Industries

Consumer Product Goods
Oil & Gas
Petrochemicals
Midstream / Pipelines
Polymers
Pulp & Paper
Food & Beverage

Hobbies

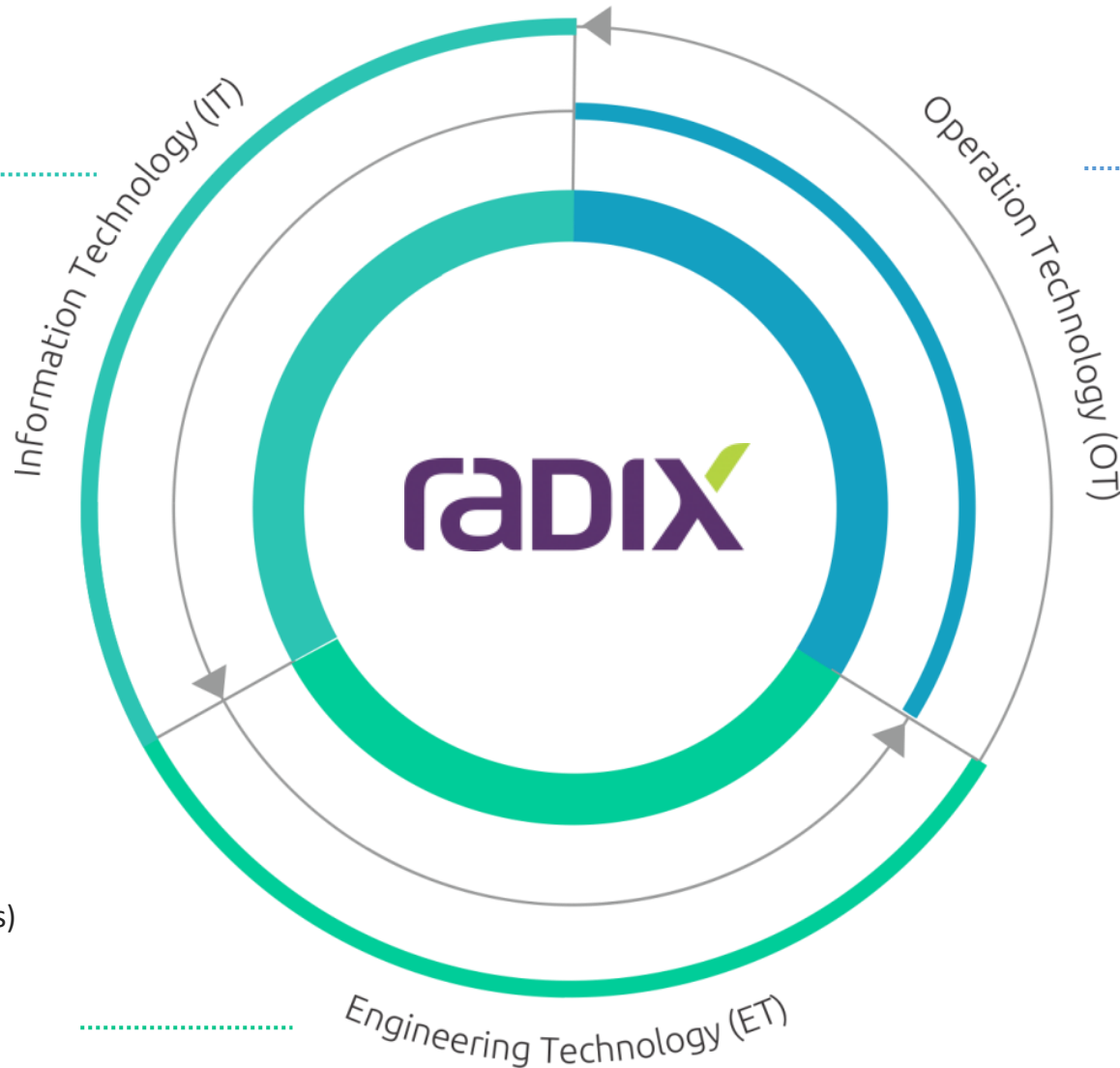
Software Development
Gaming
YouTube Content Creation (Personal Finance)

Radix Engineering and Software



- Custom Software Development
- Software Architecture
- Cloud Platforms
- **Big Data and Analytics**
- Portals / Business Intelligence
- Mobile applications
- **Governance**
- Technology Due Diligence
- **Software Sustainability**

- **Conceptual and Special Studies**
- Capital Engineering (Basic to Detailed Design)
- Digital Constructability studies
- Commissioning Support
- **Owners Engineering**
- Interface Management
- Digital Engineering (3D and Integrations)
- Facilities Support / Fleet Support / Brownfield Engineering

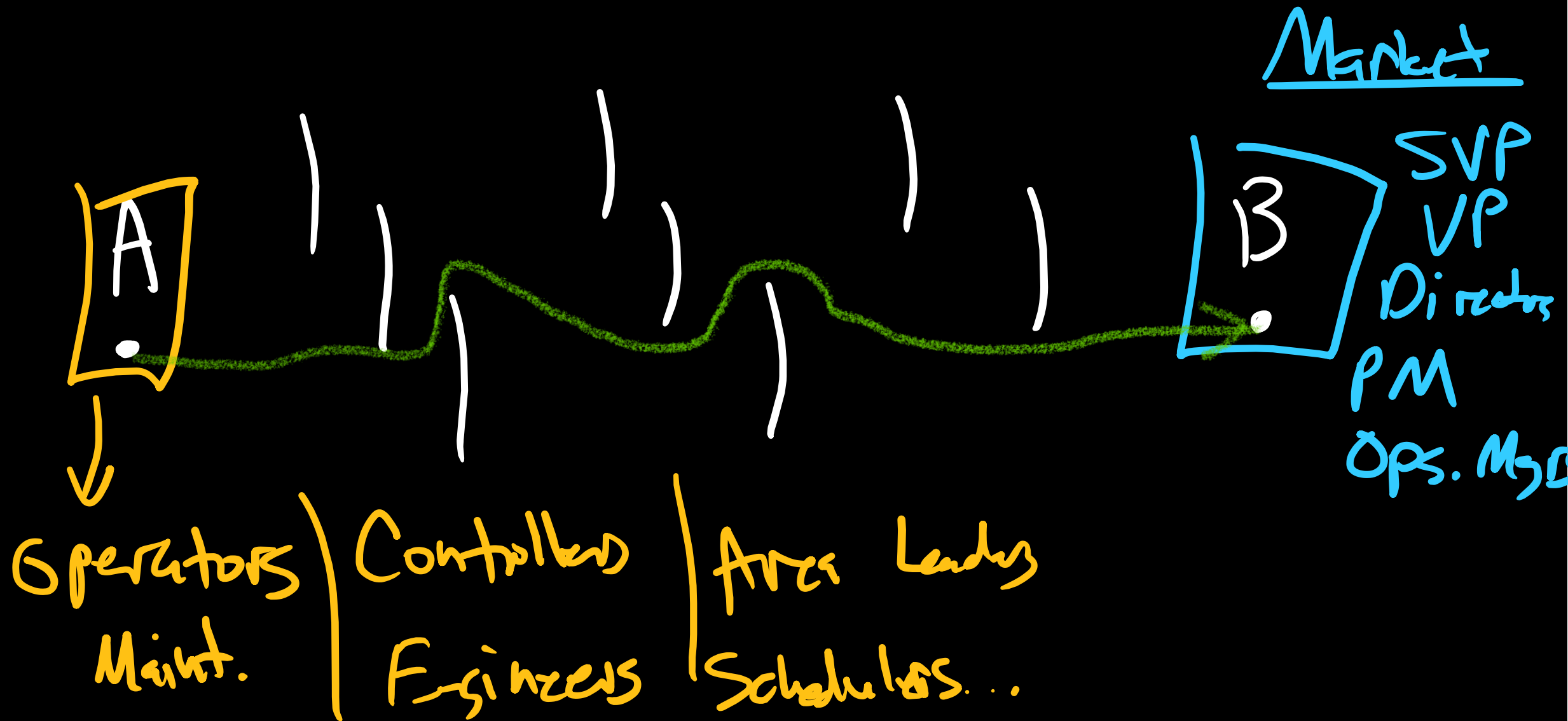


- Conceptual and Consulting Services
- **Traditional Automation** (PLCs, DCSs and SCADA)
- IIoT and Instrumentation (Data Gathering)
- Industrial Networks and Cyber Security
- Manufacturing Executive Systems (MES)
- Operations Intelligence
- Asset Management
- **Industrial Digital Twins** (Process and Equipment)
- **Machine Learning and AI**
- System/Application Support

NOTE TO VIEWER:

The next few slides were presented via spoken word and live drawings. It is best to watch the recording to understand the content.

Set The Stage (GOAL)



1) Interviews

- Who? — Resources @
EVERY Level

30-50 people — Entry
org.

1.1) Interviews

How?

Split by groups

$N < 3$

Open Ended Questions

~~Solution~~

Understand
Problem

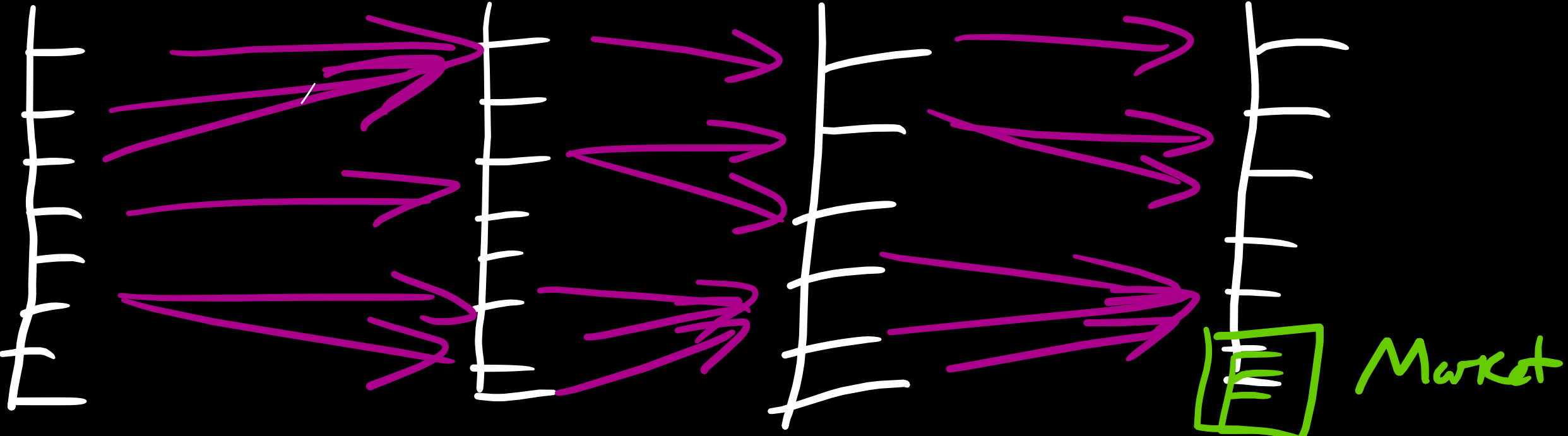
2) Problem Mapping

Voice of Customer

Problems

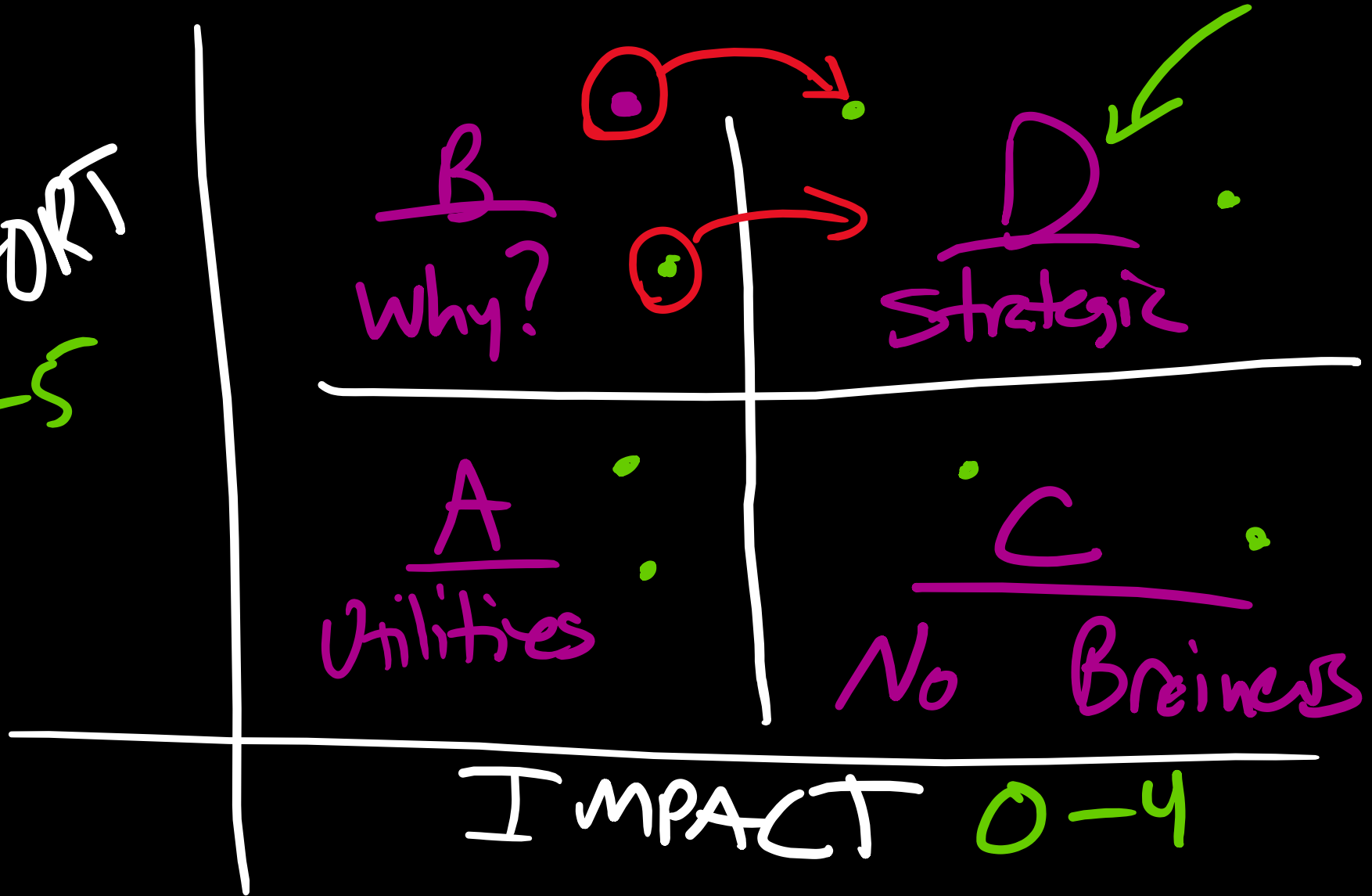
Categorize

Sol'n 



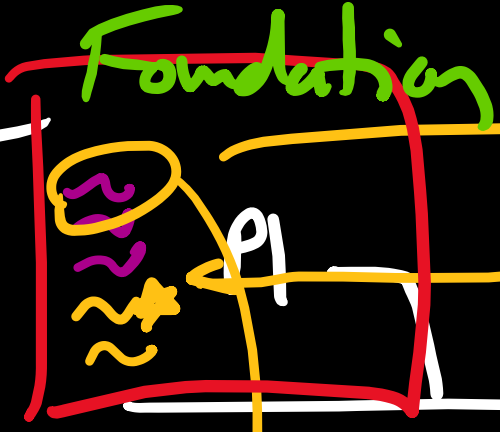
3) Prioritization

EFFORT
1-5



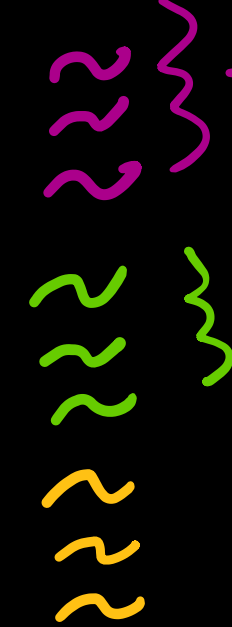
4) Roadmap

Printed Sol'n



Business Case

- Who
- What
- Why
- Why
- Risks
- Costs
- value
- Alternatives



DIGITAL TRANSFORMATION MASTER PLAN - BREWERY OF THE FUTURE

Brewery of the Future Roadmap (1/4)

How to create the Brewery of the Future based on the following pillars:

- Industry 4.0
- Efficiency and optimization
- Availability and reliability
- Security and environment
- Digital transformation and innovation
- Organization strategic directives

This Digital Transformation requires critical actions that have been addressed:

- Central data repository;
- Availability and access to information;
- Systems integration (MES, LIMS, ERP);
- Ecosystem for collection, storage and data analysis with security and integrity;
- Modern tools and technology (Analytics, advanced control, AI);
- Well structured governance plan

Potential Benefits Market Benchmark

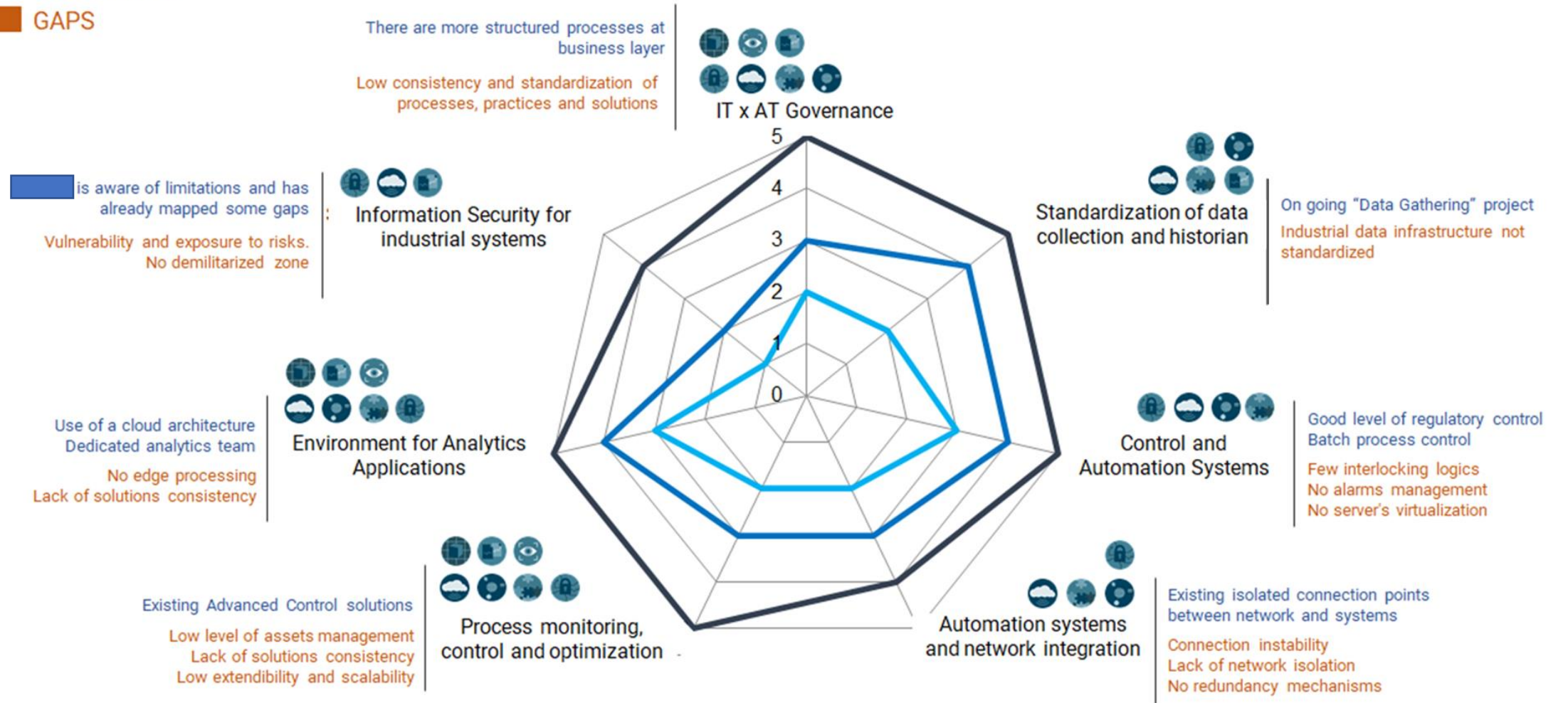
Downtime reduction	60% to 90%
Increased production line availability	10% to 20%
Reduction of preventive maintenance	30% to 50%
Reduction of setup time	25% to 50%
Reduction of rework	25% to 50%

Potential Benefits RADIX Experience

Production increase	1 - 6%
Reduction of energy consumption	3 - 10%
Reduction of process variability	50 - 200%
Improved end product quality	↑ BCI
Reduction of costs and timing for rollouts	10 - 25%

Brewery of the Future Roadmap (2/4)

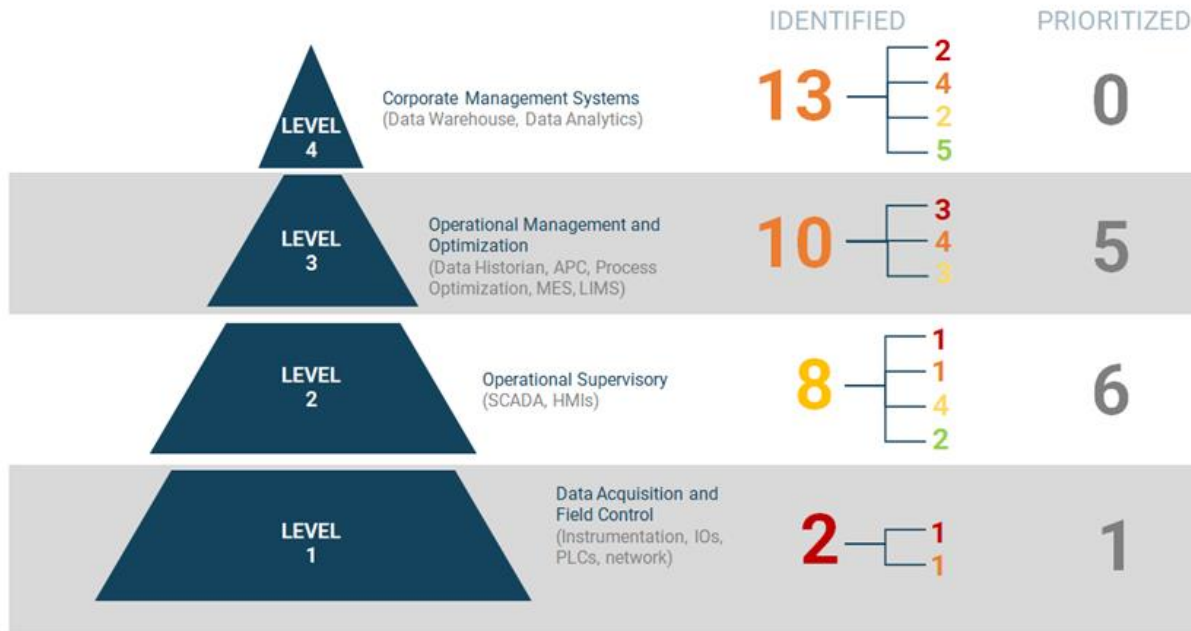
■ HIGHLIGHTS
■ GAPS



— As-is — To-be — Chosen brewery

Brewery of the Future Roadmap (3/4)

OPPORTUNITIES



PRIORITIZED OPPORTUNITIES

- Central Database
- PIMS standardization for all areas
- KPI Dashboard
- Network improvements
- Automated CO2 inventory control
- Supervisory integration
- Implementation of Automation Servers redundancy
- Alarms tuning + Alarms management system
- Video Analytics software development / installation of cameras
- Platform for Advanced Control strategies development
- Advanced Control for fermentation
- Industrial antivirus

Legend for priority levels

- Very high
- High
- Medium
- Low

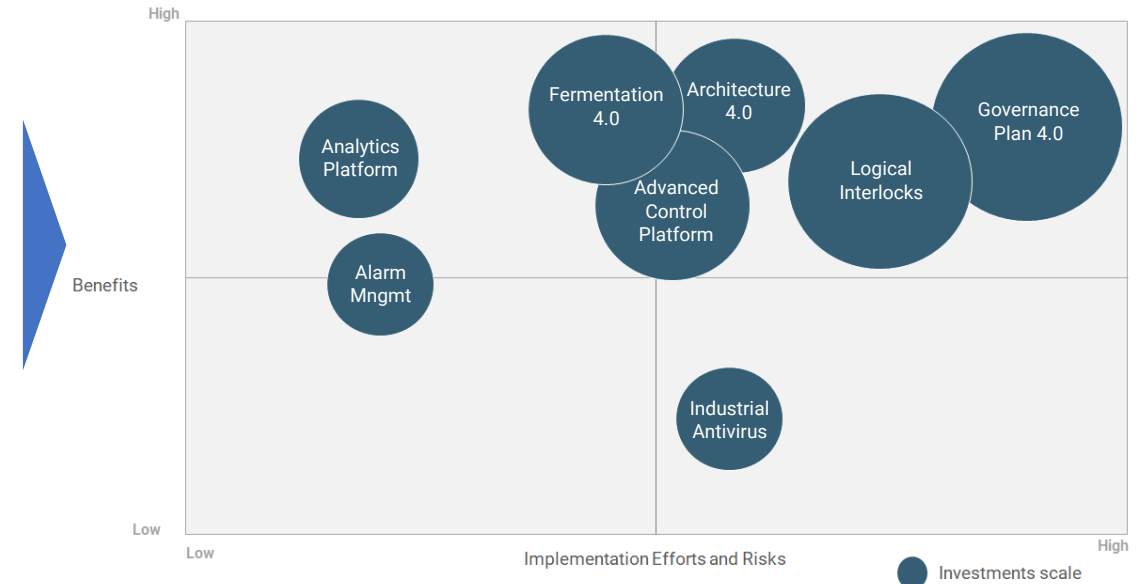
Brewery of the Future Roadmap (4/4)

Projects Categorization

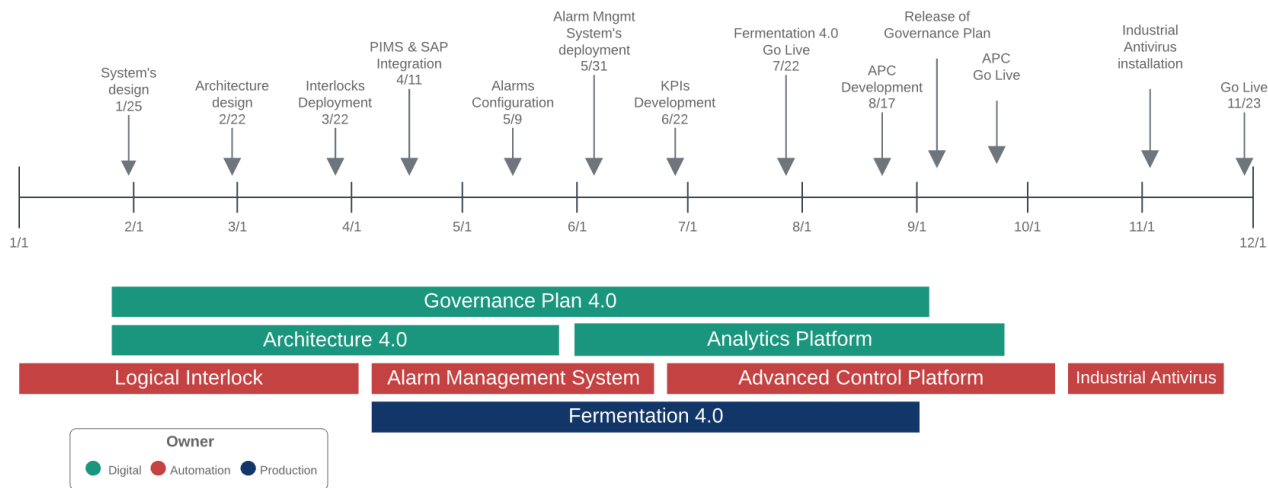
PROJECTS	BENEFITS	EFFORTS & RISKS	CAPEX*	OPEX**
Analytics Platform	high	low	70k (± 15k)	8k
Advanced Control Platform	high	med	115k (± 30k)	2k
Industrial Antivirus	low	med	N/A	30k
Architecture 4.0	high	med	95k (± 20k)	N/A
Logical Interlocks	high	high	150k (± 45k)	N/A
Alarms Management System	med	low	N/A	35k (± 15k)
Fermentation 4.0	high	med	100k (± 30k)	N/A
Governance Plan 4.0	high	high	200k (± 50k)	N/A

(*) CAPEX ESTIMATED FOR THIS SPECIFIC PLANT (BASED ON FEL1)
 (**) OPEX ONLY INCLUDES ANNUAL COSTS FOR SW LICENSES
 MAINTENANCE COSTS NOT CONSIDERED

Prioritization



Implementation Plan (Timelines)



Projects Description Sheets



Thanks!

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radix

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