AI Blueprint for Utilities:
'An Ops Director's Guide'

FYLD

Introduction:
A quiet revolution

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AI has transformed our lives in ways we could never have imagined. For the data-rich world of utilities, the paradigm shift has been no less dramatic.

In just a few years, the technology has gone from being a helpful add-on that used predictive analytics to anticipate asset failures, to a key enabler of sector operations, driving a quiet revolution in productivity, safety and sustainability.

And it's getting louder.

By July 2023, 33% of utility companies across the globe had incorporated AI into their operations. From site interventions to supply chain oversight and team deployment, AI is proving to be a game-changer for the industry, streamlining processes, boosting efficiencies and reducing incidents – all at the tap of a smartphone.

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What is AI?

Artificial Intelligence (AI), is when computers and machines are programmed to think, learn, analyse and solve complex problems like humans do. This is especially useful in the utilities sector, where it can analyse vast amounts of data to optimise energy distribution, predict equipment failures, improve resource allocation and boost overall efficiency and productivity. It can automate processes, detect anomalies and give valuable insights that help to streamline operations and reduce costs.

How does it work?

A field worker creates a job via an app on their smartphone

Job details include postcode, address, work order number, job type, depot and team members

⌄

On site, the field worker uses the app to record the location and note any hazards via video, audio or text

The AI platform automatically converts the video, audio and text into a video risk assessment

⌄

The field worker reviews the risk assessment and shares with a remote manager

The manager can sign off or add any further controls or hazards, without visiting the site

How can AI help me manage field teams?

Manage remotely

A "manager dashboard" allows you to view your teams' locations, make decisions on the go, and only visit the sites that need your attention.

Have greater visibility

With complete visibility of your field teams and sites you can make decisions remotely, saving on travel time and increasing your span of control.

Intervene

By analysing real-time data, you can take actions to prevent likely events occurring, allowing work to continue at a fast pace with minimal downtime.

Set targets and compare performance

With a meaningful data set of job durations by job type, you can set duration targets, compare performance across teams and plan job scheduling.

Manage supply chains

With connectivity from site survey to job plan to supply chain, you can plan jobs more easily and provide comprehensive briefs to contractors.

Stay compliant

The platform's data ensures accurate and transparent reporting, while centralised communication provides a full audit trail, minimising the risk of fines.

Companies using AI reported:

20%
reduction in injuries and incidents over 12-month period

90%
reduction in paper use over 5-month period

36%
reduction in manager travel time

10,400
hours saved on risk assessments based on an average of 1,000 jobs per week

Overview:
An initial trial of 20 users was so successful that it was rolled out to over 130 fieldworkers.

Company size:
450+ employees

Industry:
Gas Distribution

1,272

fieldworker hours saved
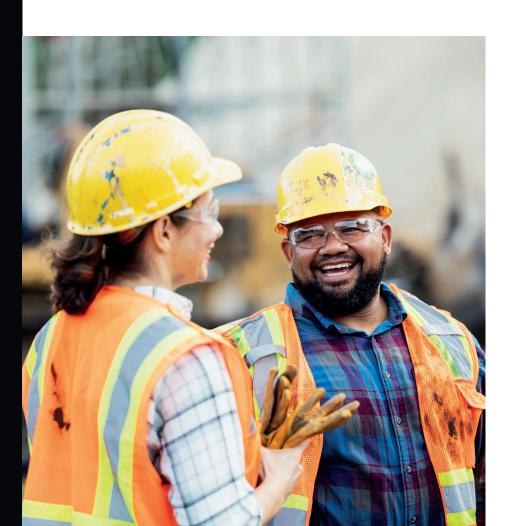
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1,500+

VRAs competed and reviewed in real-time

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12.5%

productivity uplift

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TRINITY

The Challenge

Trinity is replacing the gas distribution mains network over a 10-year period and is set to replace 3,400km of gas mains pipes. The project raised several challenges:

- Difficulty integrating with old third-party IT systems and traditional digital and manual processes that could benefit from innovation.
- Lengthy paper-based risk assessments, with point-of-work risk assessment taking 15-20 minutes.
- Lack of transparency in field crew start times, impacting scheduling and productivity.
- Lack of tools to evidence job sites, prove compliance and contest fines.
- An efficient and sustainable remote working system.

Impact of AI

An initial trial of 20 users was so successful it was rolled out to over 130 fieldworkers. Benefits included:

- Average risk assessment took just 3 minutes, saving 1,272 fieldworker hours during the 6-month trial.
- Timestamped VRAs gave remote managers visibility of start/finish times, leading to a 12.5% productivity gain.
- Compliance assurance through easy-to-use site evidencing tools, helping to defend fines and customer complaints (Trinity is now targeting a 50% reduction in fines).
- Flexible, accurate and effective management of field force teams
- An efficient and sustainable remote working system.
- Positive impact on culture, with workers rewarded for delivering on contractual obligations based on evidence.

Proven Impact

Real-time visibility:
- 1,500+ VRAs completed and reviewed by remote supervisors in real-time.
- 1330+ job wrap-ups completed to evidence sites and prevent fines.

Increased productivity:
- 1272 fieldworker hours back on the tools.
- 12.5% productivity uplift.
- 15% increase in completed jobs.

Safer operations:
- 8 hazards identified and avoided.
- Reduced need for travel.
- Reduction in CO2 emissions.

FYLD is a game changer for the way field teams work. I can intervene quickly if site conditions need to be addressed and provide advice to support productivity, as well as health and safety matters."

Carl Harris
Site Manager, Trinity

Overview:
Global infrastructure and
mobility operator

Deployment size:
1,000 users

Industry:
Transportation Infrastructure
Construction

Deployment length:
April 2022 - June 2023

75%

reduction in time creating
job hazard reports

$240K

productivity benefit

73%

below the average USA
construction incident rate

ferrovial

The Challenge

Global operator of sustainable infrastructure, Ferrovial, was tasked with widening
one of the most congested stretches of highway in Texas on a $2.6 billion project. A
paper-based approach to analysing job hazards offered managers little visibility of
the safety and operational issues across the 12 mile work site, with language barriers
further complicating processes.

Ferrovial partnered with FYLD to raise its safety outcomes whilst using the platform
to accelerate project delivery by:

- Replacing the "check box" approach to completing daily job hazard forms with
narrated video to improve quality and quantity of the delivered reports.

- Enhancing safety assessments with immediate AI-powered review of each job
video, identifying potential hazards and suggesting control options for hazard
mitigation.

- Providing on and off-site personnel with instant access to the job hazard
videos and connected AI-enhanced safety assessments, allowing them to
prioritise issues better and, where needed, take actions faster.

- Automatically translating safety videos and notes to report blockers and
secure swift responses from site managers.

Impact of AI

In less than 2 months, FYLD was rolled out to 85% of the project workers, comprising 1,000 employees and subcontractors. Benefits included:

- 75% reduction in time creating job hazard reports.
- Improved subcontractor compliance in submitting daily job hazard reports, from 16% to 100% in one particular case.
- Project managers saved significant time with complete visibility into the latest safety and productivity issues across the entire work site.
- Project managers could make data-led decisions, and use the time saved by driving less to focus on removing more job blockers and resolving more safety hazards.
- The increased frequency of hand-overs and job hazard videos improved efficiencies between job crews and avoided potential liabilities.
- An overarching increase in safety awareness and engagement by field teams.

Proven Impact

Improved productivity

- Project was completed 3 months early.
- 1,000 job hazards, safety observations and equipment inspection videos uploaded to the FYLD platform in the last 4 weeks.

Improved safety outcomes and culture

- Recordable Incident Rate (RIR) was 73% below the average construction incident rate in the USA, at 0.73 per 100 workers across 13.1 million worker hours and over 19,000 lane closures.
- In 2022, a RIR of 0.53 was achieved, and a reduced insurance premium is now being explored.
- Safety culture and engagement were improved; 8,169 job hazard videos were submitted and reviewed by over 22,000 supervisors.

Quantifiable ROI

- A rapid return on investment was documented, with an estimated $240,000/year productivity benefit due to the job hazard reports being completed at pace.
- Significant savings were made from completing the job 3 months ahead of schedule.

Before FYLD, the job hazard analysis was just a piece of paper in a file cabinet that nobody thought of again. Now, crew workers are talking about safety on video. They spark important conversations. And these videos are getting seen by people at all levels of the organisation. It's like FYLD gave the crews a voice. All of a sudden, people are listening to them; they're being heard." "

Chad Reynolds
Project Superintendent

AI:
The bigger picture

The utilities sector is facing escalating demands for efficiency and innovation as investment in the sector grows. Whilst spending on infrastructure is critical, so is the need to turbo charge operational efficiencies.

A growing number of companies are waking up to the fact that AI isn't just a choice, it's a necessity.

How do I convince my boss to embrace AI? No longer a nice-to-have…

Streamlining operations, enhancing predictive maintenance, optimising energy distribution and mitigating risks - AI makes data useful instead of overwhelming. It allows the sector to forecast demand, manage resources effectively and deliver unparalleled customer service. Done well, the ROI of implementing AI becomes quickly apparent.

Those who hesitate risk falling behind, missing a golden opportunity to revolutionise their service and cost-effectiveness. AI is no longer a nice-to-have, it's a strategic imperative for utilities to future-proof their offering, and emerge as industry leaders in an increasingly competitive environment.
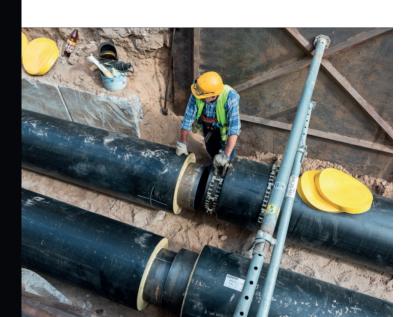
And finally… the bigger picture

If future-proofing your company hasn't convinced you, maybe the big picture perspective will: AI is good for people and the planet. It helps to predict energy demands, reduce waste and optimise resources. The 90% reductions in paper use and 36% drops in managers travel time result in fewer emissions, less strain on natural resources and better reliability for consumers.

Adopting AI isn't an overnight solution - it's a complete reimagining of what it means to work in utilities in the 21st century. But the tech is here - and with it, we can make significant strides to improve people's lives and protect our planet. Let's work together towards a more efficient and environmentally conscious future.

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How do I start using AI?

01

Assess the status quo
- Evaluate current operations, identifying areas where AI could add value and prioritise
- Develop a clear strategy, with objectives, target areas for AI and expected outcomes

02

Prep the data
- Assess data readiness and quality – AI algorithms need clean, relevant data

03

Invest
- Invest in infrastructure, cloud computing or data storage that can support AI apps and handle large datasets
- Consider partnering with AI specialists or recruit in-house expertise

04

Pilot
- Start with pilot projects in selected areas to test feasibility, validate concepts and fine-tune algorithms
- Measure the success against KPIs

05

Scale and integrate
- Once a pilot is successful, scale AI applications across your organisation, integrating into existing systems and workflows
- Provide training for staff

06

Monitor
- Monitor performance and fine-tune to improve accuracy and effectiveness
- Stay updated on advances in technology to exploit opportunities for improvement

07

Be compliant
- Make sure you're being compliant with data privacy, security and ethical AI use
- Implement transparent practices and guidelines for decision-making

FYLD