Smarter Faster Better

QUT Consulting
SNC - Lavalin
Agenda

• Overview
• Analysis
• Alternatives
• Recommendation
• Implementation
• Conclusion
Problem Statement

How do we transform the EDPM business model to embrace the opportunities stemming from technological innovation and harness its potential for profitability and future growth?
Issues

- Digital innovation spread across all sectors and business units in pockets
- R&D investment low relative to other industries
- Fairly conservative investor base
- Labor heavy business model
- New technologies in the market not being optimized in the sector
- Disruptive platforms entering the market
Our Solution

Transform and automate our engineering processes to optimize our cost structure while moving engineering to fixed price contracts
Analysis

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Macro trends

Growing need for infrastructure

Poor productivity in construction compared to other industries

Growing technology and digital solutions

Growth of an on demand and agile labor market
Company

- Extended reach
- Founded 1911
- Over 50,000 FTE
- ~10B Revenue
- BBB credit rating

- Variety of areas of subject matter expertise
- Track record + business relationships
- Sound financial performance
- As needs investment in R&D – project specific
EDPM sector

- Talent pool and tacit knowledge
- End to end services
- Track record + business relationships
- Building value through technology

75 years
18,000 FTE
~3.2B Revenue
Customer

Government
- Price stability
- On time delivery
- Transparency
- Risk adverse
- Capability shortfall

Non-government
- Typically big business
- Value for money
- Timeliness
- Outcome focused

The shareholder
- Balanced risk
- Stable dividends
- Continual growth
- Clear and convincing strategy
Alternatives
Alternatives

- Uberize your resources
- Use analytics to build better
- Print your bridge – in 3D
- Do it once, again and again
Uberize your resources

- Change the contractor employment model
- Hire engineers on demand

**Cost**
- $50-150 M

**Timeframe**
- 24 Months
Use Analytics to build Better

- Data collection during design and onsite construction
- Business intelligence with smart recommendations
- Continuous EDPM improvement

Cost
- $25-40 M

Timeframe
- 36 Months
Print your bridge – in 3D

- Establish a startup style 3D EDPM team
- Create a new suite of engineering products that can be “bought off the shelf”
- Focus on new and emerging markets

Cost
- $75-100 M

Timeframe
- 36 Months
## Selection Criteria

<table>
<thead>
<tr>
<th></th>
<th>Agility of the Model</th>
<th>Future Proofing</th>
<th>Profitability</th>
<th>Sustained competitive advantage</th>
<th>Total</th>
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<tbody>
<tr>
<td>Uberize your resources</td>
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<td>Use analytics to build better</td>
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<td>Print your bridge – in 3D</td>
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<tr>
<td>Do it once, again and again</td>
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Recommendation

Transform and automate our engineering processes to optimize our cost structure while moving engineering to fixed price contracts.
Recommendation

Do it once, again and again

Capture Tacit Knowledge
Retaining the Best Minds
Contractual Transformation
Recommendation

Capture Tacit Knowledge
- Use AI against older information to capture lost knowledge
- Re-use this knowledge on future projects to eliminate re-work
- Leverage machine learning to automatically recommend design and engineering improvements

Retaining the Best Minds
- Where possible embed workplace flexibility into your culture
- Improve employee benefits and ensure you have the best teams
- Ensure that your staff are continuously challenged and engaged in their work

Contractual Transformation
- Move to a fixed price contract
- Leverage AI and data analytics to automatically mitigate the risks to a fixed-price contract
- Automate the generation of terms and conditions to prevent previous issues from recurring
Implementation

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Implementation Plan

Capture tacit knowledge – 24 Months
- Identify target processes and outputs
- Baseline and Standardize
- Trial and Scale

$3.6 M
(36 x FTE @1000 per Day)

Retain the best minds – 12 Months
- Develop policies and procedures
- Determine required mix of technologies
- Promotion
- Capitalize on savings

$3 M
(12 x FTE @1000 per Day)

Contractual transformation – 18 Months
- Identify target customers
- Collate and categorize all relevant data
- Gather key staff for lessons learned and best practice
- Identify target areas for improvement and automation
- Recalibrate Risk Margins

$9.3 M
(24 x FTE @1000 per Day)

Initial ICT Capital Investment
$25-35M
## Risks

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<th>Risk</th>
<th>Rating</th>
<th>Mitigation</th>
<th>Rating</th>
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<tbody>
<tr>
<td>Upwork concept gains traction</td>
<td>M</td>
<td>Promote to customers the risk of hiring teams of individuals</td>
<td>L/M</td>
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<tr>
<td>Insufficient data available for machine learning</td>
<td>M</td>
<td>Contingency funding to cover labor costs of bridging the gaps</td>
<td>L/M</td>
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<td>Reduced productivity from off-site workers</td>
<td>M/H</td>
<td>Monitoring technology KPIs output and outcome focused</td>
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<td>Dedicated oversight</td>
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<td>Regular contract as standard</td>
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<td>Fixed priced contracts blow out</td>
<td>M/H</td>
<td>Incremental approach</td>
<td>L/M</td>
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<td>Additional checkpoint initially – expert pool</td>
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<tr>
<td>Investor buy-in</td>
<td>M/H</td>
<td>Explain potential of disruption and benefits of moving quickly</td>
<td>L/M</td>
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Contingency plan

What if investors & key stakeholders do not respond to plan and funding not available?

Partner with startups to develop the technologies at lower risk
Forecast

Current

Future

Profit loss offset through sale of mature capital investment projects
A new business model that delivers to the customer while reducing risk

Value in our expertise and vast experience in the industry

Tapping into our experience in ways we have never done before

Overview | Analysis | Alternatives | Recommendation | Implementation | Conclusion
In summary

**Problem:** How do we transform the EDPM business model to embrace the opportunities stemming from technological innovation and harness its potential for profitability and future growth?

**Solution:** Transform and automate our engineering processes to optimize our cost structure while moving engineering to fixed price contracts.

**Outcome:** Deliver the product that your customer wants and reduce cost to deliver the value to your shareholders.

**Future:** Develop the business model that is robust against Tech changes and is repeatable through other business units.
Questions