SNC Lavalin – the leading engineering solution partner

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Driving Question

How to achieve digital growth to become the premier engineering solution partner?

Challenges

- Changing design engineering business model
- Less need for services | billable hours due to innovations
- Low construction productivity
Alignment of digital transformation and your core value

**Recommendations**

- Robotical support
- AI and engineer collaboration
- Real time solutions
Agenda

Analysis → Evaluation → Recommendation → Implementation → Outlook
SNC LAVALIN

Products

• Variety of businesses served
• EDPM is biggest growing sector with 32%
• One of world’s most respected design engineers & project man.

USP

• All in one service solution of engineering and fulfillment
• Globally distributed
  Safety | Integrity | Collaboration | Innovation

Why customers need you

• Retain best people with greatest experience

Invest further

Advantage against online disruptors

Must be further educated to stay ahead

Analysis Evaluation Recommendation Implementation Outlook
# Construction Technology Landscape

**Low construction productivity**
Population growth → need for buildings & infrastructure

<table>
<thead>
<tr>
<th>Year</th>
<th>Firms</th>
<th>Key Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1000 firms</td>
<td>Digital collaboration, Back office construction, On site execution</td>
</tr>
<tr>
<td>2018</td>
<td>2400 firms</td>
<td>Digital twins, 3-D printing, robotics, Artificial intelligence, Supply chain optimization</td>
</tr>
</tbody>
</table>

### Digital disruption
1. Computing Power +
2. Data +
3. Connectedness
   → Customers can increasingly make use of own data

Adapt engineering model to effective technologies

Analysis ➔ Evaluation ➔ Recommendation ➔ Implementation ➔ Outlook
Acquiring Atkins – Affecting employed engineers

**Acquiring Atkins**
- Strategically important for construction sector
  - Good in Construction, digitalization, AI
- Top 100 big businesses to work in 2017
  - Now cutting half of jobs
  - Frustration, fear

**Effected engineers**
- Work partially overtaken by machines, AI
- Atkins acquirement effected work distribution
  - Frustration and expectation to cut half of the engineers (186 → 94)
  - Good engineers look out for other jobs
  → Address them

Huge part of workforce is not used for construction → could be taken to action otherwise
Vision 2020 and goals to reach

Top, global fully integrated, professional services and project management company in profitability and growth

Client-centric delivery focused

Strong, performance driven culture, operational excellence

Strong, performance driven culture

Make projects less cost intensive, more efficient and predictable → smarter ways to work

Adapt engineering model to effective technologies → become premier engineering solution partner
**Financials**

**Profitability of segments**

- **EBIT Margins:**
  - Infrastructure: 7%
  - **EDPM:** 11%
  - Oil & Gas: 7%
  - Nuclear: 18%
  - Clean Power: 13%
  - M & M: 4%

**EDPM**

- $3.2 bn revenue
- 32% of total revenues
- Backlog $2.4 bn
- Revenues 100% through Reimbursable & engineering service contracts

Investors are needed to be convinced in order to invest in the EDPM business.
How to achieve digital growth?

**#1**
- Digital collaboration
  - Design simulation
  - Virtual learning

**#2**
- On-site execution
  - 3D printing
  - Robotic Assistance

**#3**
- Back Office
  - Real-time monitoring + control
  - Drone enabled

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Analysis  Evaluation  Recommendation  Implementation  Outlook
Decision Criteria

- Cultural fit → in accordance with values + vision 2020
- Sustainable growth → operational excellence
- Expected benefits → short implementation time
- Financial feasibility → within the budget

Analysis | Evaluation | Recommendation | Implementation | Outlook
Offer new ways to convince clients of you by keeping human creativity

Design Simulation

Virtual learning

Availability

Innovative + highly tailorable

Cost efficient

Analysis Evaluation Recommendation Implementation Outlook
## Decision Matrix - #1 Digital collaboration

### Cultural fit
- Design simulation: Green
- Virtual learning: Green

### Sustainable growth
- Design simulation: Green
- Virtual learning: Green

### Expected benefits
- Design simulation: Green
- Virtual learning: Yellow

### Financial feasibility
- Design simulation: Green
- Virtual learning: Green

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**Analysis** **Evaluation** **Recommendation** **Implementation** **Outlook**
Decision Matrix - #1 Digital collaboration

- Design simulation
  - Cultural fit
  - Sustainable growth
  - Expected benefits
  - Financial feasibility

- Virtual learning
  - Cultural fit
  - Sustainable growth
  - Expected benefits
  - Financial feasibility

Analysis | Evaluation | Recommendation | Implementation | Outlook
#2 On-site execution

Offer new ways to convince clients of you by ensuring maximal safety + productivity of workers.

- 3D printing
  - Cheap = Quick

- Robotic Assistance
  - More efficiency + safety
  - High standardization
Decision Matrix - #2 On-site execution

<table>
<thead>
<tr>
<th>Method</th>
<th>Cultural fit</th>
<th>Sustainable growth</th>
<th>Expected benefits</th>
<th>Financial feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>3D printing</td>
<td>Orange</td>
<td>Orange</td>
<td>Orange</td>
<td>Green</td>
</tr>
<tr>
<td>Robotic Assistance</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
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Decision Matrix - #2 On-site execution

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<td>Cultural fit</td>
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Analysis - Evaluation - Recommendation - Implementation - Outlook
Back Office

Offer new ways to convince clients of you by ensuring maximal quality

- Real-time monitoring + control
- Drone enabled
- Ensuring high quality
- More efficiency + safety
- More efficiency + safety

Analysis, Evaluation, Recommendation, Implementation, Outlook
Decision Matrix - #3 Onsite execution

Real-time monitoring + control

Drone enabled

Cultural fit | Sustainable growth | Expected benefits | Financial feasibility

Expected benefits: Drone enabled

Analysis | Evaluation | Recommendation | Implementation | Outlook

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Decision Matrix - #3 Onsite execution

- **Real-time monitoring + control**
- **Drone enabled**

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Analysis | Evaluation | Recommendation | Implementation | Outlook
Recommendations

Alignment of digital transformation and your core value

Robotical support

AI and engineer collaboration

Real time solutions
How to achieve digital growth?

#1
Digital collaboration

#2
On-site execution

#3
Back Office
1. Innovation Labs for engineers

What to do?

- 7 innovation Labs in North America (e.g. New York, Toronto), Europe and Asia
- Engineers and digital features together
- 3D modelling
- Feedback possibilities
- Bonus payment for good ideas

Benefit

- Faster project execution (5-10% up to 2020)
- More creativity
- AI can support with ideas from other labs

Collaboration
1.1 Contract Management

- More projects
- Fulfill demand of growing population
- Incentives for engineers
- Efficiency

**Benefit**

Billable Hours ➡️ Billable pace
How to achieve digital growth?

#1 Digital collaboration

#2 On-site execution

#3 Back Office
Robotic Assistant on-site

Safety + Efficiency

What to do?
- 100 Robotic Assistant in 3 years
- Helps workers
  - Safety
  - Efficiency
- Material check
- Connection to IT-System

Benefit
- Efficiency increase by 20-25% up to 2020
- Lower safety issues
- Crash rate decrease by 10-15%
How to achieve digital growth?

1. Digital collaboration
2. On-site execution
3. Back Office
3. Real-Time project Monitoring

- On-time project controlling
- Less error probability
- Operation excellence

Benefit:

Back-Office with AI project controlling

Integrity

Robotic assistant

Analysis Evaluation Recommendation Implementation Outlook
How to achieve digital growth?

#1 Digital collaboration
#2 On-site execution
#3 Back Office

INNOVATION
Risk & Mitigation

1. Risk: Other company create innovations with disruptive potential
   - Own labs secure innovative potential
2. Risk: Engineers do not use the labs
   - Activation of the engineers spirit in order to create innovations
3. Risk: Potential Problems with the robots
   - Long testing periods required and also a step by step implementation
Roadmap

Implementation Action | 2019 | 2020 | 2021 | 2022 | Costs
---|---|---|---|---|---
Innovation labs | | | | | $50-60 Mn
IT-System and AI project controlling system | | | | | $15-20 Mn
Robotic Assistants | | | | | $75-80 Mn
Total amount | | | | | $160 Mn
## Future Outlook

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment</th>
<th>NPV</th>
<th>IRR</th>
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<tr>
<td>2019</td>
<td>-155</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>50</td>
<td></td>
<td></td>
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<tr>
<td>2021</td>
<td>60</td>
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<tr>
<td>2022</td>
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<td></td>
<td></td>
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<tr>
<td>2023</td>
<td>110</td>
<td>$68.43</td>
<td>28%</td>
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2019 Investment: -155
2020 Profit: 50
2021 Profit: 60
2022 Profit: 80
2023 Profit: 110
NPV: $68.43
IRR: 28%
Why to invest in SNC – Lavalin?

• Continued growth for value-added global engineering

• Digital transformation and your core values go hand in hand

• International leadership in premier engineering solutions

• Middle term: A-Rating, outlook: positive