SNC Lavalin is prepared for digital times ahead!
Which digital alternatives can provide a sustainable future and growth for SNC Lavalin?
Key recommendation

Stay competitive on the disrupted market of construction in the digital age through implementing

Cloud engineering
Open community
Human resource platform
Virtual Reality
Key issues

Increasing importance of EDPM within SNC Lavalin

Challenges of increasing importance of digitalization

Difficulties of acquiring and keeping high experienced engineers

Increased efficiency results in decreasing billable hours
Today's agenda

1. Analysis
2. Alternatives
3. Evaluation
4. Implementation
5. Risks & Contingencies
SNC Lavalin Group

Clean power | Infra-structure | Mining & Metallurgy | Nuclear | Oil & Gas | Engineering, design & project management


Covering the whole supply chain

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Covering the whole supply chain
“provide homes, education and connections by building apartment complexes, schools and bridges”
### SNC Lavalin EDPM

<table>
<thead>
<tr>
<th>From design to finished project</th>
<th>“provide homes, education and connections by building apartment complexes, schools and bridges”</th>
<th>Customer relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Financial Human</td>
<td></td>
<td>Customer segments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revenue streams</td>
</tr>
</tbody>
</table>

**From design to finished project**

- From design to finished project
- "provide homes, education and connections by building apartment complexes, schools and bridges"

**Customer relations**

- Customer relations

**Customer segments**

- Customer segments

**Revenue streams**

- Revenue streams
### SNC Lavalin EDPM

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Alternatives</th>
<th>Evaluation</th>
<th>Implementation</th>
<th>Risks &amp; Contingencies</th>
</tr>
</thead>
</table>

**From design to finished project**

- **Physical**
- **Financial**
- **Human**

“provide homes, education and connections by building apartment complexes, schools and bridges”

**Customer relations**

**Customer segments**

**Revenue streams**
High experienced engineers

Hard to get and even harder to keep?
Hard to get and even harder to keep?

**Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies**

- **Worker**
  - Safe job & salary
  - Comfortability

- **Customer**
  - Quality
  - Safety
  - Service

- **Task**

- **Deliver project**

- **Engineering service**

High effort of acquiring
Reduced effort through interaction platforms

Worker | Platform | Customer

Will this affect SNC Lavalin EDPM?

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Likelihood of arising affects

Probability

Impact

Public and private customers with big projects

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
### SNC Lavalin EDPM

<table>
<thead>
<tr>
<th>From design to finished project</th>
<th>“provide homes, education and connections by building apartment complexes, schools and bridges”</th>
<th>“if there is a service a customer needs we cover it for him”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td></td>
<td>Increasing interest in digitalization techniques</td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Revenue streams

- **Public**
- **Private**

---

**Analysis** | Alternatives | Evaluation | Implementation | Risks & Contingencies
Is SNC Lavalin EDPM digital yet?

In order to stay competitive it is highly important to leverage core values of innovation and collaboration to overcome challenges of digitization!
“provide homes, education and connections by building apartment complexes, schools and bridges”

“if there is a service a customer needs we cover it for him”

→ Increasing interest in digitalization techniques

<table>
<thead>
<tr>
<th>Physical</th>
<th>Financial</th>
<th>Human</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>20%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Percentage of revenue share:

2017 2018
0 40

Contracts:

Reimbursable Fixed Price

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Increased efficiency leads to decreased revenue

Increased efficiency leads to shorter work time → Shorter work time leads to viewer billable hours → 75% of the revenue comes from reimbursable contracts → Increasing importance of EDPM

How can SNC Lavalin increase efficiency without compromising revenue?

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
In summary

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Innovation and collaboration as core values</td>
<td>• Revenue streams rely mostly on reimbursable contracts</td>
</tr>
<tr>
<td>• Financial resources</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Construction has low degree of digitalization</td>
<td>• Fast changes in technology landscape</td>
</tr>
<tr>
<td>→ “First mover”?</td>
<td>• Challenges of acquiring high experienced engineers</td>
</tr>
<tr>
<td>• Growing world population</td>
<td></td>
</tr>
</tbody>
</table>
# Digital alternatives for future growth

1. Cloud engineering
2. Open community with incentives
3. Human resource platform
4. Artificial intelligence
5. Big Data
6. 3D printers
7. Virtual reality
## Evaluation of digital alternatives

<table>
<thead>
<tr>
<th></th>
<th>Increasing customer service</th>
<th>Employee satisfaction</th>
<th>Costs</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open community</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human resource platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D printers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Analysis | Alternatives | **Evaluation** | Implementation | Risks & Contingencies
Key recommendation aspects

<table>
<thead>
<tr>
<th>Cloud engineering</th>
<th>Open community</th>
<th>Human resource platform</th>
<th>Virtual Reality</th>
</tr>
</thead>
</table>

Stay competitive on the disrupted market of construction in the digital age through implementing Cloud engineering, Open community, Human resource platform, and Virtual Reality.
Key recommendation aspects

Stay competitive on the disrupted market of construction in the digital age through implementing

<table>
<thead>
<tr>
<th>Cloud engineering</th>
<th>Open community</th>
<th>Human resource platform</th>
<th>Virtual Reality</th>
</tr>
</thead>
</table>

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Implementing cloud engineering to set international working teams

Communication, collaboration, working environment

Engineer 1

Engineer 2

Engineer 3

Engineer 4

Optimization of HR capacity worldwide
Selection process of project members

- Finalizing project contract
- Uploading project details in cloud
- Selection options:
  - Data analysis of own employees
  - Own registration

Increased efficiency through higher motivation

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Key recommendation aspects

Stay competitive on the disrupted market of construction in the digital age through implementing

<table>
<thead>
<tr>
<th>Cloud engineering</th>
<th>Open community</th>
<th>Human resource platform</th>
<th>Virtual Reality</th>
</tr>
</thead>
</table>

Analysis | Alternatives | Evaluation | **Implementation** | Risks & Contingencies
Introducing idea finding platform

- Online platform
- Diversified members
- Bringing expertise together
- Monetary incentives for best practices

Finding best ideas and practices for problem solving and optimization

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Key recommendation aspects

Stay competitive on the disrupted market of construction in the digital age through implementing:

<table>
<thead>
<tr>
<th>Cloud engineering</th>
<th>Open community</th>
<th>Human resource platform</th>
<th>Virtual Reality</th>
</tr>
</thead>
</table>

Analysis | Alternatives | Evaluation | **Implementation** | Risks & Contingencies
Overcoming insufficient availability of needed engineers

Leveraging human resources without permanent contracting

Scanning engineers with personal data → Selection, negotiation and contracting for project → Adding to cloud with own employees to complete team

Analysis | Alternatives | Evaluation | **Implementation** | Risks & Contingencies
Key recommendation aspects

Stay competitive on the disrupted market of construction in the digital age through implementing:

- Cloud engineering
- Open community
- Human resource platform
- Virtual Reality

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
Introducing virtual reality to reach more efficient project and time management

Enabling more satisfying customer management
### Timeline

#### Measures \ Year

<table>
<thead>
<tr>
<th>Measures</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracting cloud engineering provider</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customizing and implementing cloud engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminars for users</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of open community and HR platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introducing open community and HR platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procurement of VR technics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installing VR customer experience rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
### Investment costs

#### Measures \ Year

<table>
<thead>
<tr>
<th>Measures</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>Costs in Mio $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracting cloud engineering provider</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>Customizing and implementing cloud engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seminars for users</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>Development of open community and HR platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Introducing open community and HR platform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.05</td>
</tr>
<tr>
<td>Procurement of VR technics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Installing VR customer experience rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

Total investment costs: 160.05 Mio $
How to fund the investments?
Development of the EPS

Earnings Per Share

CAGR = 13%

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
# Key Performance Indicator

<table>
<thead>
<tr>
<th>KPI's</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS</td>
<td>3.65</td>
<td>3.95</td>
<td>4.43</td>
<td>5.4</td>
<td>6.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Employee satisfaction</td>
<td>80%</td>
<td>84%</td>
<td>87%</td>
<td>92%</td>
<td>92%</td>
<td>92%</td>
</tr>
<tr>
<td>Billable hours</td>
<td>100%</td>
<td>102%</td>
<td>101%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Loan in Mio $</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>35</td>
<td>25</td>
<td>15</td>
</tr>
</tbody>
</table>

Analysis | Alternatives | Evaluation | Implementation | Risks & Contingencies
I. Quality issues

II. Lack of social skills

III. Imitation
We are looking to further discuss on the topic with you!