EFICIENCY IN WATER AND SANITATION COMPANIES
FOR OPERATORS IN THE LATIN AMERICAN AND CARIBBEAN REGION

BELIZE WATER SERVICES

May 19, 2021

Opt->Ex : Opting for Excellence!
PRESENTATION CONTENTS

• Introduction
• Business Process Re-engineering
• Operational Improvements
• Strategic Planning
• The results of Strategy
• Conclusion

Opt->Ex : Opting for Excellence!
Introduction - Country Location

Opt-Ex: Opting for Excellence!
BACKGROUND: BELIZE WATER SERVICES LTD.

- Company, 83% owned by a European Company
- Commenced operations in March 2001
- Privatization short-lived
- Shareholding (eff. 2005)
  – Government: 83%
  – Social Security: 10%
  – 1400 Minority: 7%
- Regulated by the Public Utilities Commission
  – Water Industry Act, PUC Act
  – Agreed Codes of Practice
  – Five-Year Business Plan Reviews

Opt->Ex : Opting for Excellence!
BWS now delivers water to over 270,000 people (65%+ of population) and still counting ...

Key:
- Pre-2010 Service area
- New Service area
Across the Country, Services delivered via:

- 11 Office Locations
- 13 Water Distribution Systems
- 2 Reverse Osmosis Desalination plants, 3 Water Treatment Plants from rivers, 8 systems supplied by well fields
- 3 Sewerage Collection and Treatment Systems
- 295+ Full Time Employees
Opt->Ex : Opting for Excellence!
CHALLENGES FOR WATER UTILITIES

• Aged Infrastructure
• Climate Change
  – Droughts
  – Natural Disasters
• Risks to Water Sources
• Political Considerations
• Economic Conditions
• Willingness to pay

Opt->Ex : Opting for Excellence!
CHALLENGES AT START (2001)

- Massive Debt Burden
- Financial Losses
- Poor Cash Flow
- New Regulatory Control (PUC)
- Water Supply Limitations – esp. Belize City
- High Water Losses (NRW)
- Inherent inefficiencies
- Outdated Systems
- Poor Asset condition
- Meter Under-Registration
CONQUERING CHALLENGES
# The First Year: 2001/2002

<table>
<thead>
<tr>
<th>Description of KPI</th>
<th>UNIT</th>
<th>2001/02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No. of Customers</td>
<td>No.</td>
<td>37,303</td>
</tr>
<tr>
<td>Water Production Volume</td>
<td>M³x1000</td>
<td>10,580</td>
</tr>
<tr>
<td>Water Sales Volume</td>
<td>M³x1000</td>
<td>5,052</td>
</tr>
<tr>
<td>Water Loss Volume</td>
<td>M³x1000</td>
<td>5,529</td>
</tr>
<tr>
<td>Water Loss % (NRW %)</td>
<td>%</td>
<td>52.3%</td>
</tr>
<tr>
<td>Gross Revenue</td>
<td>US$' 000</td>
<td>9,651</td>
</tr>
<tr>
<td>Operations and Maintenance</td>
<td>US$' 000</td>
<td>7,635</td>
</tr>
<tr>
<td>EBITDA</td>
<td>US$' 000</td>
<td>2,016</td>
</tr>
<tr>
<td>Net Profit (Loss)</td>
<td>US$' 000</td>
<td>-1,826</td>
</tr>
</tbody>
</table>
MEASURES IMPLEMENTED

- Expenditure cuts (40% Staff cuts, Closure of 1 office)
- Sourcing BZ$26M (US$13M) Commercial Debt
- Improved Financial Controls
- Asset management/ refurbishment
- Outsourcing (security, collections etc.)
- Streamlining Operations and Customer Service
- Human Resource changes (Training, Salary scales, pension plan, performance appraisal system etc.)
- **Focus on improving efficiency, incl. reducing NRW**
- Benchmarking & Monitoring

Opt-Ex : Opting for Excellence!
THE TRANSFORMATION (2001-2010):

- Organizational Restructuring
- Employee Commitment
- Agreed Codes of Practice
- Systems and Procedural Changes
- Automated Job Tracking
- Improved Operational Performance
- Improved Financial Performance
BWS OPERATIONAL IMPROVEMENTS

Opt->Ex : Opting for Excellence!
• Full Metering implemented
• Production Meters at all Production Points
  – Wells
  – Water Treatment Plants
• DMZ/DMA Meters at Strategic Points Within Distribution Systems
• Customer Meters (commercial & residential)
  – Meters on Public Stand-Pipes
  – Meters on all Government Buildings
METER READING

DMZ/DMA Readings

Residential Reading

Opt->Ex : Opting for Excellence!
METER READING

• Read all Production Meters Daily
• Read all DMZ Meters Daily; or more often if leaks suspected
• Read all Key Accounts Weekly
  – Allows for better monitoring
  – BWS provides feedback to Customers for faults
• Read all Customer Meters Monthly
CUSTOMER ACCOUNTS AND BILLING

• **Security Deposits** implemented

• **Billing**
  – Implemented improved CIS/Billing Systems and procedures
  – Bill all Customers Monthly
  – Electronic bills (via e-mail) introduced
PAYMENTS AND ARREARS

• **Payments**
  – All Customers required to make payments monthly
  – Collection agents/on-line collections utilized

• **Arrears Collections**
  – Monthly disconnection exercise for non-payment (over 30 days)
  – Security Deposits applied to outstanding balance
  – Collectors/bailiffs contracted for ‘bad debts’ collections
MEASURES TAKEN TO IMPROVE NRW

- On-going focus on leak reduction
- Public Relations – toll free leak reporting
- District Metering Zones or Areas
- Planned Meter Replacement Program
- Year/month coding on meter nos.
- Increased number of NRW Staff
- Training and Development of NRW staff
- Knowledge transfer from International partners
- Utilized IDB programs including training and twinning
- Draw-down of CDB Loan Funds for NRW
- Documentation of Systems via CAD then now to GIS
- Utilize technology
NON-REVENUE WATER REDUCTION

Water Loss by Volume and NRW%

- Gallons Millions
- Non-Revenue Water Volume
- Non-Revenue Water %

Opt->Ex : Opting for Excellence!
IMPLEMENTING STRATEGIC PLANNING AT BWS

(2010)
Why Implement Strategic Planning?

In other words, learning to do the right things right... better.

Opt->Ex : Opting for Excellence!
THE BALANCED SCORECARD

- To establish shared common purpose (Mission, Vision, Objectives) and other strategy components
- To communicate relevant components clearly to involve all staff in implementation
- To define a means of focusing staff, resources and procedures in alignment of objectives

“Without Strategy, the organization is like a ship without a rudder”
J. Ross and M. Kami
“BROAD GOALS” (2010)

• Minimize costs by operating water and wastewater systems more efficiently
• Utilize technology & infrastructure to provide high quality service
• Be Financially and Operationally Viable
• Establish fast and efficient response to Customers and Stakeholders
**Methodology to Implement BSC**

- Established a Corporate Strategy Unit
- Selected a Strategic Management Team
- Selected Members from all levels of staff to various strategic planning committees
- Hosted workshops with staff members
- Held full staff conference & unit meetings
- Communicated, communicated, communicate, communicating ...
BWS Strategic Planning Methodology

Name: Our Pipeline to Excellence

Abbreviation: Opt->Ex

Slogan/Mnemonic: Opting for Excellence!
MISSION STATEMENT

To improve the lives of consumers by delivering quality and cost-effective water and wastewater services in an environmentally responsible manner while promoting employee excellence, fulfilling our social responsibility and providing a fair return to our shareholders.
VISION STATEMENT

By 2018, we will be the leading provider of water and wastewater services in the region and will exceed stakeholders’ expectations.
OUR CORE VALUES

FAIRNESS
We do what is right and treat everyone fairly, the same way we would want to be treated.

ACCOUNTABILITY
We are transparent in all activities, taking responsibility for what we do and accepting appropriate rewards and consequences for our performance.

INTEGRITY
We are open and honest, true to our beliefs, matching our behaviour to our words and being morally responsible at all times.

RESPECT
We have the highest regard for our customers, stakeholders and colleagues treating them with dignity, equality, kindness and trust.

STEWARDSHIP
We are committed to building a better, more efficient company, acting with owner’s mentality, to develop our resources and improve performance, and improving our communities and the environment.

SERVICE-ORIENTED
We are committed to serving our valued customers by understanding their needs and delivering a high standard of professionalism and workmanship at all times.

TEAMWORK
We work together through cooperation, dedication and open communication to achieve our goals.

Opt->Ex : Opting for Excellence!
ALIGNED INITIATIVES AND PROJECTS

• Utilized technologies to improve service and water quality
• Strategic Partnerships, Associations and Trainings
  – Better trained staff
  – Improved Customer Service delivery
  – Saved investment of $ Millions
• Expansions (BWS and 3rd party funded)
  – Larger Customer and Asset Base
• Coordinated with Municipal Infrastructure projects
  – Improved Assets, water quality and NRW
• Improvements in Wastewater treatment

Opt->Ex : Opting for Excellence!
THE RESULTS OF STRATEGY

Gains and Benefits

Opt->Ex : Opting for Excellence!
EXPANDING SERVICE

Length of Mains

Kilometers (km)

- 2001/02
- 2003/04
- 2005/06
- 2007/08
- 2009/10
- 2011/12
- 2013/14
- 2015/16
- 2017/18
- 2019/20

Opt->Ex : Opting for Excellence!
Customer Growth
PRODUCTION AND CONSUMPTION

Production and Consumption Volumes

Gallons Million

Water Production

Water Sales

Opt->Ex : Opting for Excellence!
REDUCTIONS IN NRW

Water Loss by Volume and NRW%

Opt->Ex : Opting for Excellence!
## NRW Progress Comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Production</td>
<td>M³x1000</td>
<td>10,580</td>
<td>10,141</td>
<td>11,291</td>
<td>13,679</td>
<td>-4.1%</td>
<td>6.7%</td>
<td>29.3%</td>
</tr>
<tr>
<td>Water Sales</td>
<td>M³x1000</td>
<td>5,052</td>
<td>7,164</td>
<td>8,623</td>
<td>10,487</td>
<td>41.8%</td>
<td>70.7%</td>
<td>107.6%</td>
</tr>
<tr>
<td>Non-Revenue Water Volume</td>
<td>M³x1000</td>
<td>5,529</td>
<td>2,977</td>
<td>2,668</td>
<td>3,192</td>
<td>-46.1%</td>
<td>-51.7%</td>
<td>-42.3%</td>
</tr>
<tr>
<td>Non-Revenue Water %</td>
<td>%</td>
<td>52.3%</td>
<td>29.4%</td>
<td>23.6%</td>
<td>23.3%</td>
<td>-43.8%</td>
<td>-54.8%</td>
<td>-55.3%</td>
</tr>
<tr>
<td>Non-Revenue Water (M³/Conn/Day)</td>
<td>M³</td>
<td>0.41</td>
<td>0.18</td>
<td>0.14</td>
<td>0.14</td>
<td>-56.3%</td>
<td>-67.3%</td>
<td>-66.1%</td>
</tr>
<tr>
<td>Non-Revenue Water (M³/Km/Day)</td>
<td>M³</td>
<td>16.93</td>
<td>7.53</td>
<td>5.38</td>
<td>5.66</td>
<td>-55.5%</td>
<td>-68.2%</td>
<td>-66.6%</td>
</tr>
</tbody>
</table>
Opt->Ex : Opting for Excellence!

BWS REVENUES

BWS Revenues

BZ$ Thousands

$0

$10,000

$20,000

$30,000

$40,000

$50,000

$60,000


Gross Revenue  Lineal (Gross Revenue)
REVENUES & PROFIT

BWS Revenues and Profits

Opt->Ex : Opting for Excellence!
# EFFICIENCY AND INFRASTRUCTURE

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPERATIONAL EFFICIENCY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. No. of Staff (Permanent)</td>
<td>No.</td>
<td>244</td>
<td>229</td>
<td>256</td>
<td>298</td>
<td>-6.1%</td>
<td>4.9%</td>
<td>22.1%</td>
</tr>
<tr>
<td>Staff Per 1000 Connections</td>
<td>No.</td>
<td>6.66</td>
<td>5.07</td>
<td>4.74</td>
<td>4.80</td>
<td>-23.9%</td>
<td>-28.9%</td>
<td>-28.0%</td>
</tr>
<tr>
<td>Revenue/Emp.</td>
<td>US$</td>
<td>39,551</td>
<td>67,788</td>
<td>78,290</td>
<td>85,698</td>
<td>71.4%</td>
<td>97.9%</td>
<td>116.7%</td>
</tr>
<tr>
<td><strong>COLLECTION EFFICIENCY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdue Debtors/Trade Debtors</td>
<td>%</td>
<td>26.5%</td>
<td>14.2%</td>
<td>12.4%</td>
<td>15.6%</td>
<td>-46.3%</td>
<td>-53.3%</td>
<td>-41.0%</td>
</tr>
<tr>
<td>Bad Debts Write Off/Net Turnover</td>
<td>%</td>
<td>2.2%</td>
<td>0.3%</td>
<td>0.4%</td>
<td>0.2%</td>
<td>-86.4%</td>
<td>-81.2%</td>
<td>-91.0%</td>
</tr>
<tr>
<td>Collection Efficiency</td>
<td>%</td>
<td>n/a</td>
<td>98.7%</td>
<td>98.9%</td>
<td>98.6%</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>WATER INFRASTRUCTURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Length of Mains**</td>
<td>Km</td>
<td>894.6</td>
<td>1,083.4</td>
<td>1,358.8</td>
<td>1,540.0</td>
<td>21.1%</td>
<td>51.9%</td>
<td>72.1%</td>
</tr>
</tbody>
</table>
CONTINUOUS IMPROVEMENTS:

• Service Excellence
  – Better trained staff
  – Improved Customer Service delivery

• Operational Excellence
  – NRW Water Loss reductions – lead to substantial revenues and savings
  – Improved water quantity, pressure and quality

• Growth and Development
  – Improved Profits and Retained Earnings
  – Larger Customer and Asset Base
CONCLUSION

Opt->Ex : Opting for Excellence!
CONCLUSION SUMMARY

• Business Process Re-engineering
  – Assisted with initial efficiency gains, and
  – Operational Improvements

• Strategic Planning used to reach the next level
  – Requires support from Board of Directors
  – Get staff involved and ‘on board’
  – Establish Objectives and set targets or goals
  – Initiatives and activities aligned with objectives
  – Successes need to be measured and celebrated!

Opt->Ex : Opting for Excellence!