Insourcing vs. Outsourcing

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Agenda

- Ehvert Mission Critical
- Data Centres – Then and Now
- Power & Cooling
- Considerations
- Costs
- Making the Choice
Founded in 1988, Ontario-based Ehvert has grown from a regional engineering consultancy to a leading Canadian design, engineer, procurement and construction firm focused exclusively on mission critical projects and facilities.

- **1988**: Incorporated in Ontario as Ehvert Construction Commercial & Institutional
- **1993**: Launched IT infrastructure engineering services
- **1998**: Expanded IT engineering services to include ASP development
- **2003**: Expanded mechanical and electrical engineering capabilities
- **2008**: EPC and turn-key design/build of data centers
- **TODAY**: Leading Canadian design, engineer, procurement and construction firm.
Global Presence

- North America
- Europe

- Montreal
- Toronto
- EMEA
Key Projects

Cogeco

University of Toronto

Onx Momentum
Accreditations

- LEED Professionals
- Quebec RBQ
- OBC BCIN: Complex, large and small buildings, housing, fire protection, building systems and plumbing
- Contributor, The Green Grid
- Founder, 7X24 Exchange Canadian Chapter
- ASHRAE TC 9.9 Presenter, The Uptime Symposium
- Accredited Tier Designer
Data Centre Requirements

- Power & Cooling
- Communications
- Controls
- Security
- Equipment
- Architecture
Where Have Data Centres Come From and What Have They Become?

- Originally built to support the mainframe computer
- Advent of server technology and LAN’s created the need for small server rooms and LAN closets
- Currently, cloud computing can be considered the rebirth of the mainframe
- Now back to large Data Centres viewed as an integrated physical plant
Power & Cooling

- Power consumption can be greater than 30kW per rack.
- 100% of the energy going into the rack is being converted into heat.
- One rack equals 12 gas ranges.
- Robust air conditioning systems are now required to remove the heat.
Temperature

ASHRAE: Thermal Guidelines for Data Centres
Outsourcing vs. Insourcing

Considerations

- Startup
- Facility
- Expansion
- Capex

- Opex
- Regulations
- Security
- Risk
Start Up

OUTSOURCING
- Obtain Quotes
- Sign Contract
- Relocate Equipment (not always very easy)

INSOURCING
- Requires Space & Sufficient Power
- Requires a firm that has expertise in designing & building Data Centres
Facility

OUTSOURCING

- Not always easy to work in
- Restricted Access
- No space for equipment
- Hard to leave once contract has been signed

INSOURCING

- Easier to work in since you own the space
- High demand for DC space making it easy to sell or lease when vacating the space
- Will lose sunken costs into building infrastructure
Expansion

OUTSOURCING

- If provider has space and power, expansion is easy
- If the provider is sold out of space you may have to relocate to another facility

INSOURCING

- Must plan for future growth, otherwise difficult and costly to expand
- Easy to expand if you have built a modular data centre
Expertise
How much of it do you need?

**OUTSOURCING**
- Assumption is that providers have the expertise required
- Use caution! Many providers do not have the required training and expertise to operate
- State of the art facility and staff allows you to focus on your own core business – as long as it never goes down

**INSOURCING**
- You may not currently have the expertise to design, build and operate one of the facilities but you can purchase this expertise
- Provides owner with more control
Risk OUTSOURCING

- Availability: unplanned outages or maintenance will affect access to your data
- Should a disaster occur there is little for you to do but wait
- Security: you are allowing an outside party access to your most critical data
- The service level could fall short of what you would receive from your own staff
- Do not assume that your provider knows and meets all of the government regulations
- Be sure to perform your own due diligence and careful planning
Risk

INSOURCING

- Do not assume that you have the expertise to build your own facility
- Properly forecast company’s IT growth
- Ensure that your facility has resiliency and energy efficiency
Traditionally, facility cost was a fraction of the overall Data Centre budget.

Now: FACILITY COST = IT COST = POWER COST

In 10 years power costs will exceed facility cost.
Outsourcing

Operational Expenses

- Provider is seeking to make a profit
- Operating expense may appear to be cheaper, however unfriendly contracts may lead to high operating expenses
- Pay as you go: ongoing expenditures

Capital Expenses

- Reduced capital spend
Cost
Operational and Capital Expenses

INSOURCING

Operational Expenses

- Can be costly to employ full time facilities staff
- Power, floor space, storage
- True cost structure

Capital Expenses

- Large upfront capital expenditure
- Long term savings
Making the Choice

- Determine what your company’s growth plans are
- Remember to consider external factors such as power consumption
- Evaluate your costs, risks and most importantly, your rewards