Measuring the ROI from Wireless LANs

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About Nucleus Research

An ROI-focused technology research and advisory firm.

We deliver ongoing advice, analysis, and modeling tools to help senior management quantify and prove the financial and business benefit their technology decisions bring to the corporation.

3% ROI?
23% ROI?
323% ROI?
4323% ROI?
Agenda

- Identifying ROI potential
- Scoring the potential
- Why measure
- Calculations
- Assessing benefits and costs
- The final steps
Nucleus Research products

- **ROI Advisory Service:**
  - We provide on-going information, insight, financial tools, and methodology to help you accurately assess the return for proposed and existing technology.
  - Unlimited support for your IT CFO.

- **Project support:**
  - We give you assessment support for a single technology decision.
  - A Nucleus Research analyst helps develop the business case.
Let’s look at ROI...
The hard fact of technology

If an application doesn’t generate a positive return, you shouldn’t have deployed it.

Deploying too many applications with a negative ROI (that can’t be blamed on others) can get the CIO fired.
Shiny object syndrome

Sometimes the best ROI is to let go!
But how do you decide when to hold on?
The ROI from Wireless LANs

- Increased productivity
- Increased flexibility
- Reduced network costs
- Lower support costs
Five factors to consider when measuring the potential return
Factor 1 - Breadth

Does it impact a lot of people or only a few?

The greater the **breadth** of the application, the higher the potential return.
Factor 2 - Repeatability

Will the application be used frequently or infrequently?

The greater the **repeatability** of the application, the higher the potential return.

Training and repeatability are linked!
Factor 3 - Cost

Is this a costly or relatively inexpensive task?

The greater the cost of the task, or the greater the benefit, the higher the potential return.

Workflow for new drug submission

Workflow for ordering new business cards
Factor 4 - Collaboration

Does this task involve collaboration among groups?

The greater the collaboration component of the task, the higher the potential return.
Factor 5 - Knowledge

Will this task involve management of key information?

The greater the use of knowledge management the higher the potential return.
Applying the factors to Wireless LANs

- **Breadth**
  - Number of users?
  - Partners or customers?

- **Repeatability**
  - E-mail only?
  - Sales/targeted use?

- **Cost**
  - Replace, supplement, or displace?
Measuring Technology
Why use financial measurements?

**Old Days**

- Choice was limited and the value was obvious.

**Today**

- You have many choices, often replacing current strategies.
- Decision must be based on sound business criteria.
Where to focus efforts?

Can you identify the areas that deliver maximum benefit?

Content management:

<table>
<thead>
<tr>
<th></th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>10</td>
</tr>
<tr>
<td>Searching</td>
<td>90</td>
</tr>
</tbody>
</table>
Cost vs. benefit

Can you justify the upgrade or purchase decision?

• Will the company get back more than it spends?
• Did I get a fair price based on the benefits?
• Can I prove this to management?
• Can I prove this to the shareholders?
## Prioritize projects

<table>
<thead>
<tr>
<th>Project</th>
<th>ROI</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project A</td>
<td>345%</td>
<td>18 months</td>
</tr>
<tr>
<td>Project D</td>
<td>128%</td>
<td>8 months</td>
</tr>
<tr>
<td>Project C</td>
<td>54%</td>
<td>1 month</td>
</tr>
<tr>
<td>Project B</td>
<td>120%</td>
<td>38 months</td>
</tr>
<tr>
<td>Project E</td>
<td>205%</td>
<td>19 months</td>
</tr>
</tbody>
</table>
Standard ROI process

**Identify**
- Top areas of real benefit
- Impact to company/group
- Stakeholders

**Quantify**
- Measure benefit areas
- Confirm values
  - Survey
  - Direct observation
  - Estimate
- Get benefit buy-in

**Assess**
- Calculate Metrics
- Reconfirm values
- Perform sensitivity analysis
- Assess expected case/worst case

**Category Assessment**
- Marketing materials
- Trade pubs
- Competition

**Phase 1**
**Phase 2**
**Phase 3**
**Financial Results**
Three steps to ROI:

**Identify**
Define the end result in financial terms and define the components that support the end result.

**Quantify**
Measure the value of the application against the components.

**Assess**
Calculate metrics and analyze the sensitivity of the results.
1) **Identify the end result**

- **Reduce time to market**
  
  “Reduce the time to market for new products by 10%.”

- **Increase productivity**
  
  “Provide tools that increase average worker productivity in marketing by 5%.”

- **Increase innovation**
  
  “Increase the development of new products by 10% per year.”

- **Reduce cost**
  
  “Reduce the cost of the accounting budget by 20%.”
1a) Identify components

Example: “Reduce time to market”

- Increase collaboration
- Provide efficient searching tools
- Streamline project management
- Automate common workflows
- Extend information base to suppliers and customers
- Include PR agency and outside contractors
- Integrate Marketing, Engineering, Sales, and Support
2) Quantify values

- “Efficient searching tools will increase productivity by 5%.”

- “Project management tools are not expected to change productivity.”

- “Research base will increase re-use of information, resulting in a reduction in personnel time of 10%.”

- “Electronic assembly of project materials will reduce delivery charges by $100,000.”
3) **Assess results**

- Percentage of direct to indirect benefits
- Reliance on one or two key benefits
- Worst case
- Payback and ROI
- Alternatives
  - Deployment strategies
  - Lease vs. buy
  - Other applications
The Calculations
Using financial measurements

- Compare financial measurements to other internal decisions and success factors
  - NOT to the results of other companies!
Short finance class...

Toolbox used to measure the value of technology:

- Net Present Value
- Payback Period
- Return on Investment
- IRR
- TCO
**Net Present Value**

NPV

The value today of cash received at a future date given an interest rate.

Use a spreadsheet or a financial calculator

@ 15% Interest Rate

$100

$152.09

Year 3
Payback Period

Payback

The time period needed before net savings equal initial cost.

Excellent measure of risk
Should be the key measurement!
Payback and Risk

Payback indicates when $\text{ROI} = 0$

Short payback periods drive an aggressive deployment strategy:

Deploy today and – if necessary – discard tomorrow.
Return On Investment

ROI

The average total savings over 3 years divided by the cost.

\[
\text{ROI} = \frac{(\text{Year 1, Year 2, Year 3})}{3} \div \text{Initial Cost}
\]

Nucleus recommends a three year horizon but use a time period consistent with your organization’s standards.
Internal Rate of Return

**IRR**

The interest rate that equates to the cash flows.

Never use IRR!

If you have to, use MIRR instead.
What about TCO?

Total Cost of Ownership looks at costs and ignores benefits.

- Good for comparing two similar applications
- Good for budgeting
- Bad for choosing applications
- Bad for prioritizing projects
What about the others?

- **EVA** - Economic Value Add(ed) is really ROI less the cost of capital. It’s simple but eliminates an important ratio: Is an EVA=3% good or bad?

- **TEI** - Total Economic Impact is really just ROI but explicitly includes direct and indirect benefits.

- **ROO** - Return on Opportunity is TEI made fluffier.

- **ROA** - Return on Assets is only interesting if there are sunk intangible costs.

- **cROI** – False ROI inflated by vendor marketing folks.
Assessing costs and benefits
Recurring vs. One Time

Costs and savings can be either one-time or recurring:

- maintenance
- purchase hardware
- hire employees
- sell old hardware
- contract with consultants
Measuring costs

Basic Rules

• Count everything that is directly associated with the project.
  (I purchased a web server for this project)

• Don’t count infrastructure items not associated with the project.
  (I used the existing web server)

• Do count infrastructure items that were driven by the project.
  (The company purchased a web server because of this project and two others like it - include 1/3 of the cost)
Six categories of cost

1. Software
2. Hardware
3. Personnel
4. Consulting
5. Training
6. Other

one time and recurring
Cost examples
(one time)

- Purchased 1 Server @ 50K

- 5 developers spent 3 weeks creating the application
  \[5 \times 3 \times 5 \times \text{Fully Loaded Cost} = ?\]

- Created a 10 page training guide for 50 people
  \[50 \times 10 \times .07 = 35\]
Cost examples (recurring)

- Maintenance on the server is 5K per year.
- The IS department has dedicated one-fifth of a person to maintaining the system.
- I plan to hire consultants in years 2 and 3.
Measuring Benefit
Benefit examples - directly quantifiable

- Reduced the number of personnel.
- Reduced costs to print and distribute the maintenance manual.
- Avoided regulatory fines.
- Reduced accounts receivable.
- Reduced the cost to publish to the web.
- Reduced travel costs.
Benefit examples - productivity based

- Reduced the time needed to develop new software by 25%.
- The financial audit takes 1 week rather than 3 weeks.
- Maintenance on an aircraft takes 10% less time.

- Increased software quality
Types of benefits

Direct savings
- Reduction in cost

Semi-direct savings
- Expected reduction in cost

Indirect savings
- Increase in worker productivity

Very indirect savings
- Increase in manager productivity

Believability

1st Order  2nd Order  3rd Order  4th Order
Techniques for measuring benefits

- Direct observation – pilot site
- Corporate history
- Surveys
- Case studies
- Benchmark data
- Educated guess
- Uneducated guess
- Psychic
- Vendor-supplied estimates

Good

Bad

Always do a worst-case assessment
Benefit achievability

Type of benefit

4th Order
3rd Order
2nd Order
1st Order

Measurement strategy

Observation
Case studies
Educated guess
Vendor calculator

Caution
Unlikely
Good
Caution
Inefficient transfer of time

The fact of life: time saved does not equal time worked.

Use correction factors to adjust the estimate of time saved to a reasonable estimate of the value to the company.

Range from 0.1 to 1 to adjust time saved to time worked.
Benefit assessment worksheet

Estimate of productivity increase: 5%
(based on: direct survey and estimate)

Value of increase for 10 people @ $100K ea: $50,000
(use fully loaded cost)

Correction factor: 0.50
(Correct for inefficient transfer of time)

Expected benefit to company: $25,000

How will the benefit be achieved?

__ Reduction in staff or staff hours
Benefit milestone

Commit to achievable milestones:

Target: $25,000 annual savings

Year 1: Reduce hourly cost by $2,500
Year 2: Reduce hourly cost by $12,500
Year 3: Reduce hourly cost by $25,000 or staff by 1 person
Examples...
Example

“The sales review process is shortened because instant updates are delivered to reviewers!”

- How many steps in the review process?
- Time saved at each step? (survey or direct observation)
- Fully loaded cost per hour? (apply correction factor)
Example

“We no longer need to send paper updates - we can deliver them electronically!”

- Cost of printing and shipping each month?
- Time saved by not updating?
  They may be goofing off so apply a correction factor!
- Top-line productivity benefits?
Example

“The software engineers were able to complete more work!”

- What was the % growth in work?
- What was the % growth in the department?
- Calculate the # employees saved times the fully loaded cost

Didn’t need to hire so there is no one to goof off -- no correction factor.
Example

“Providing access to information on the road increased productivity!”

- **Calculate time saved per employee**
  
  Apply a correction factor!

Or

- **Calculate the impact on business profit**
  
  - Sold more software?
  - Repaired more aircraft?
  - Wrote more insurance policies?
Example

“Employees make better decisions and are happier!”

Great!

(probably can’t count it)
The Tool
Fixing a negative ROI

- Change the price!
- Ramp costs with users
- Reduce pre-start costs
  Moving cost out of the pre-start column increases ROI.
- Evaluate productivity
  Is the correction factor aggressive?
  Is the productivity benefit estimate too low?
- Expand the opportunity
  Can you deploy to more people?
The right corporate ROI strategy includes:

- **Common metric for all projects.**
  - ROI and Payback

- **Standard correction factors for benefits.**

- **Standard ROI tool and business case presentation.**

- **Key personnel managing assessments armed with information, case studies, benchmark data.**
Summary

- ROI from wireless LANs depend on applications, NOT technology.

- Measuring ROI should be consistent and structured across your entire company.

- Most successful deployments follow small steps rather than large-scale events.

- Gauge the breadth and repeatability before you start.

- Examine both expected and worst-case ROI.

- The shorter the payback, the lower the risk.
Resources

Nucleus Research Web site:
www.NucleusResearch.com

Nucleus Research knowledge center
- Tutorial
- B20 – ROI Quick Reference Guide
- A11 – Managing Payback and Risk
- A10 – Maximizing ROI
- A21 – The Strengths and Weaknesses of TCO
- A4 – Human Factors Impact Application Value