

# 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.**

**Research centers in Boston, Paris, and London.**



**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.



# Clients



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

1

2

3

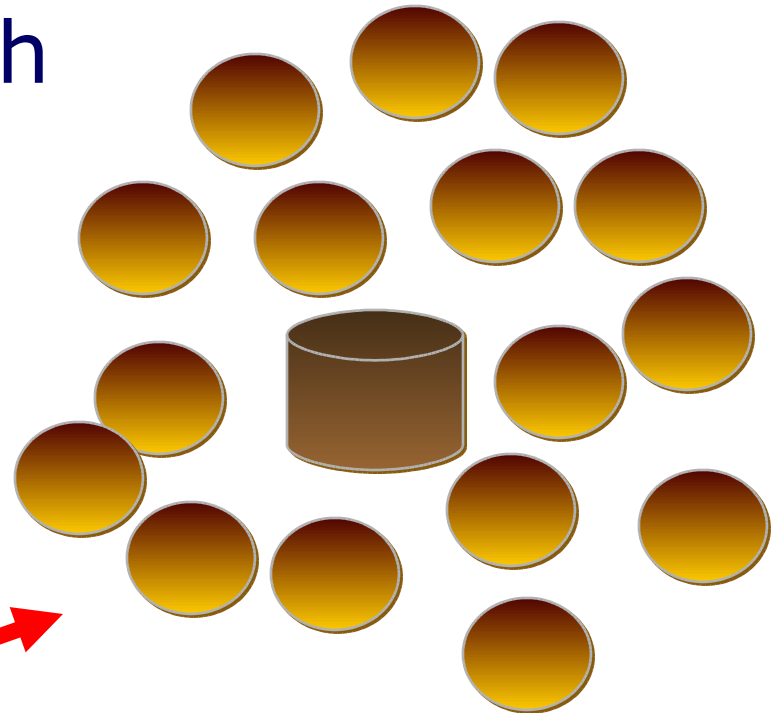
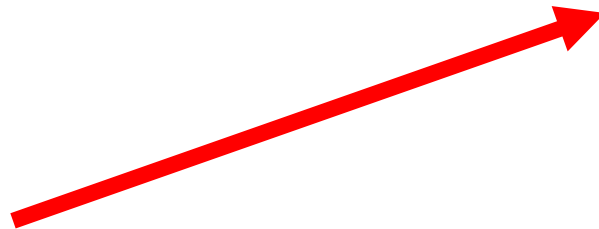
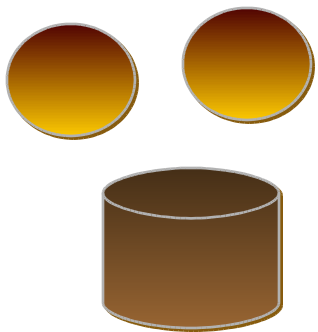
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## Factor 1 - Breadth

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

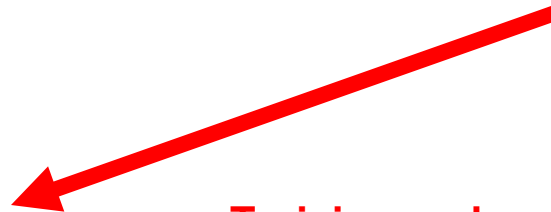
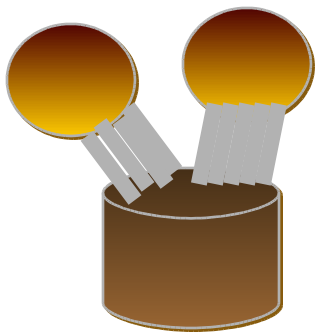
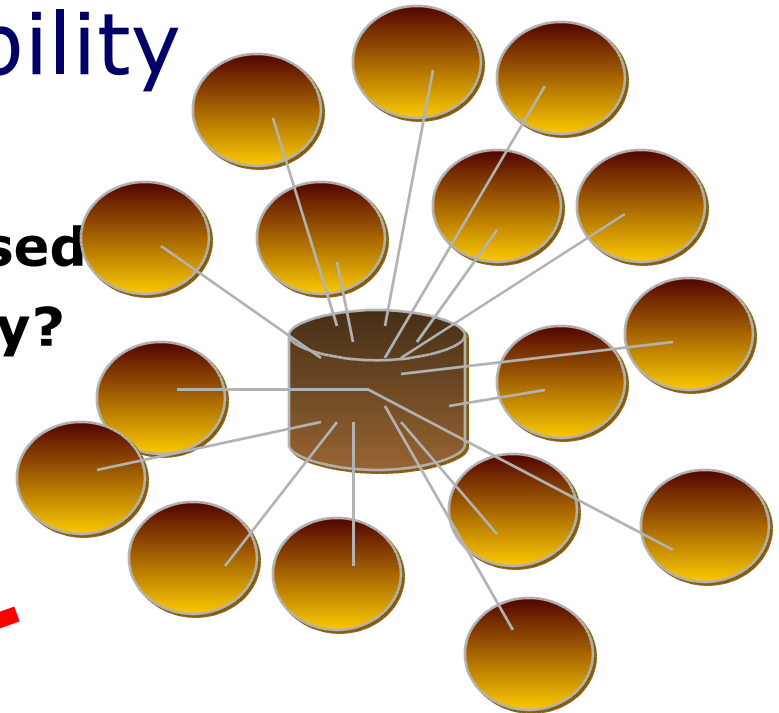
The greater the **breadth** of the application, the higher the potential return.



## Factor 2 - Repeatability

**Will the application be used frequently or infrequently?**

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



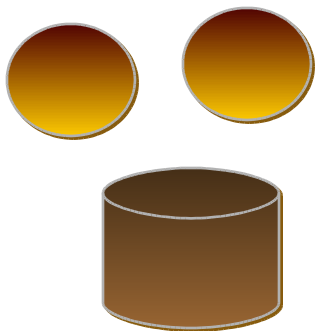
**Training and repeatability are linked!**



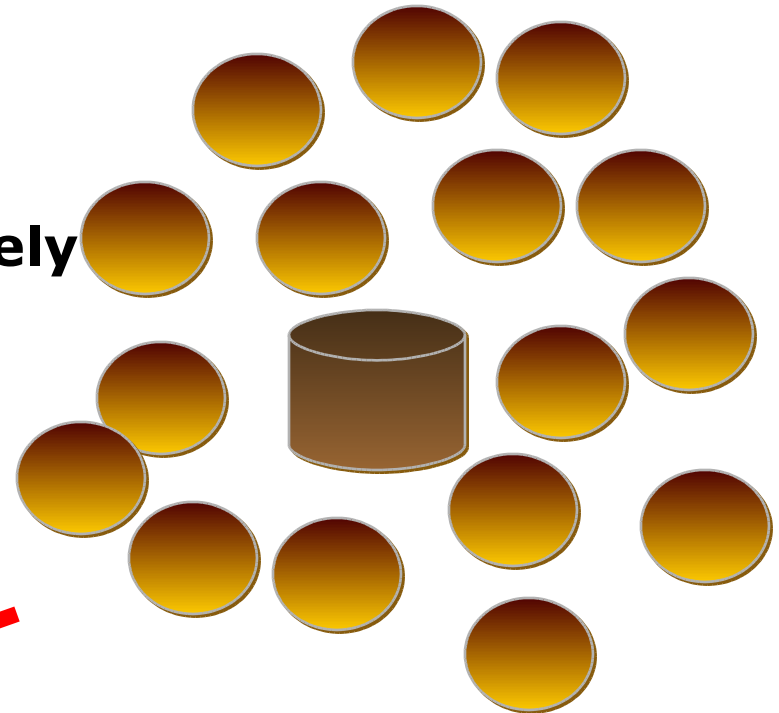
## Factor 3 - Cost

**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**

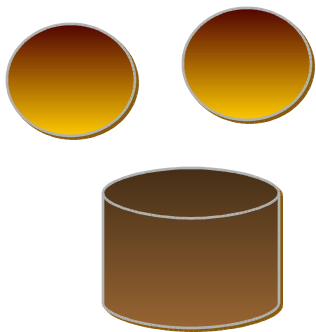


**Workflow for ordering new business cards**

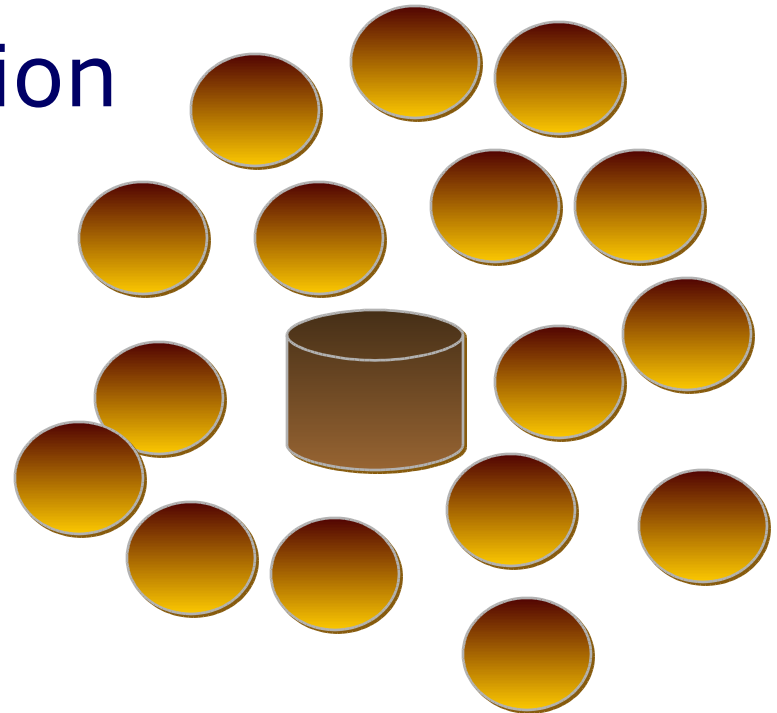
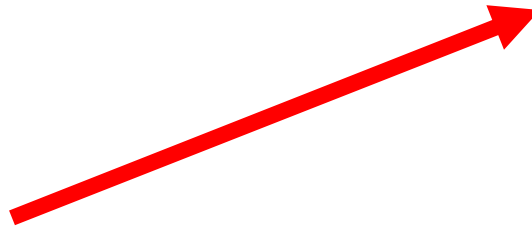
## Factor 4 - Collaboration

**Does this task involve collaboration among groups?**

The greater the **collaboration** component of the task, the higher the potential return.



**Individual information retrieval**

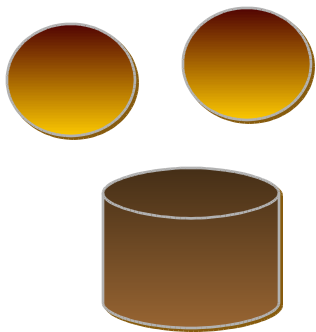


**Group discussion around information creation**

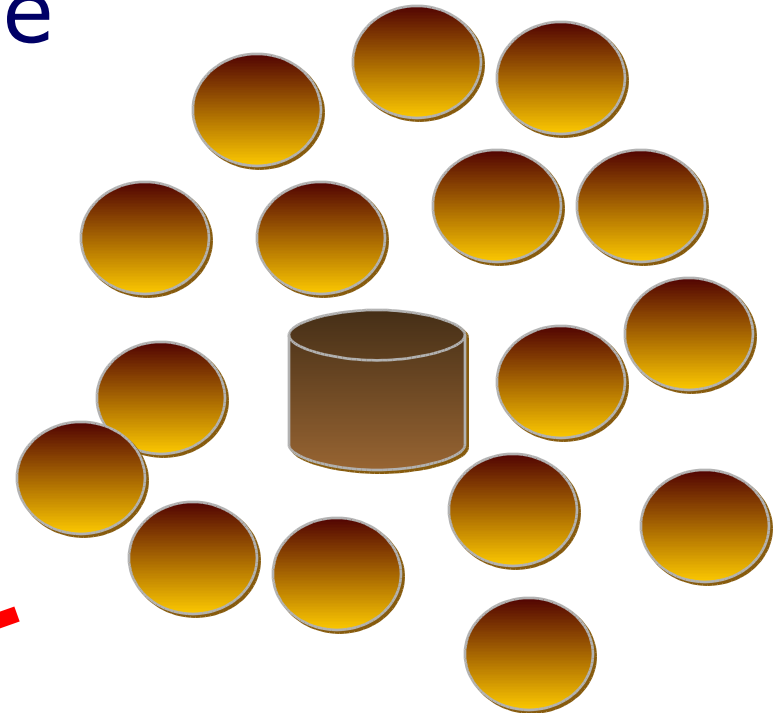
## Factor 5 - Knowledge

**Will this task involve management of key information?**

The greater the use of **knowledge management** the higher the potential return.



**Corporate sales customer information base**



**Daily cafeteria menu**

# 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?**

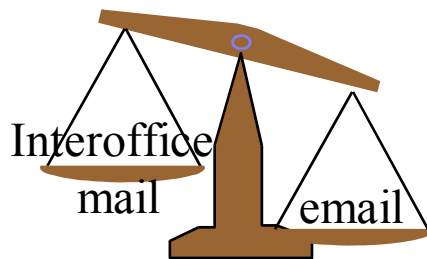
# Measuring Technology



## Why use financial measurements?

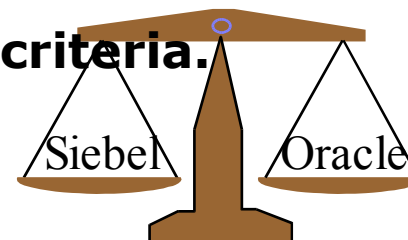
### Old Days

- **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.**

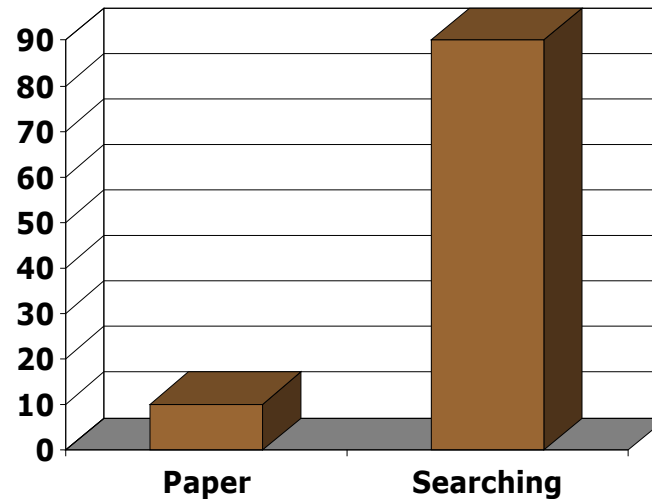


# Where to focus efforts?

**Can you identify the areas that deliver maximum benefit?**

**Content management:**

**Benefit**



## 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 end user?**





## Prioritize projects

	<b>ROI</b>	<b>Payback</b>
<b>Project A</b>	<b>345%</b>	<b>18 months</b>
<b>Project D</b>	<b>128%</b>	<b>8 months</b>
<b>Project C</b>	<b>54%</b>	<b>1 month</b>
<b>Project B</b>	<b>120%</b>	<b>38 months</b>
<b>Project E</b>	<b>205%</b>	<b>19 months</b>



## Standard ROI process



### Identify

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

### Quantify

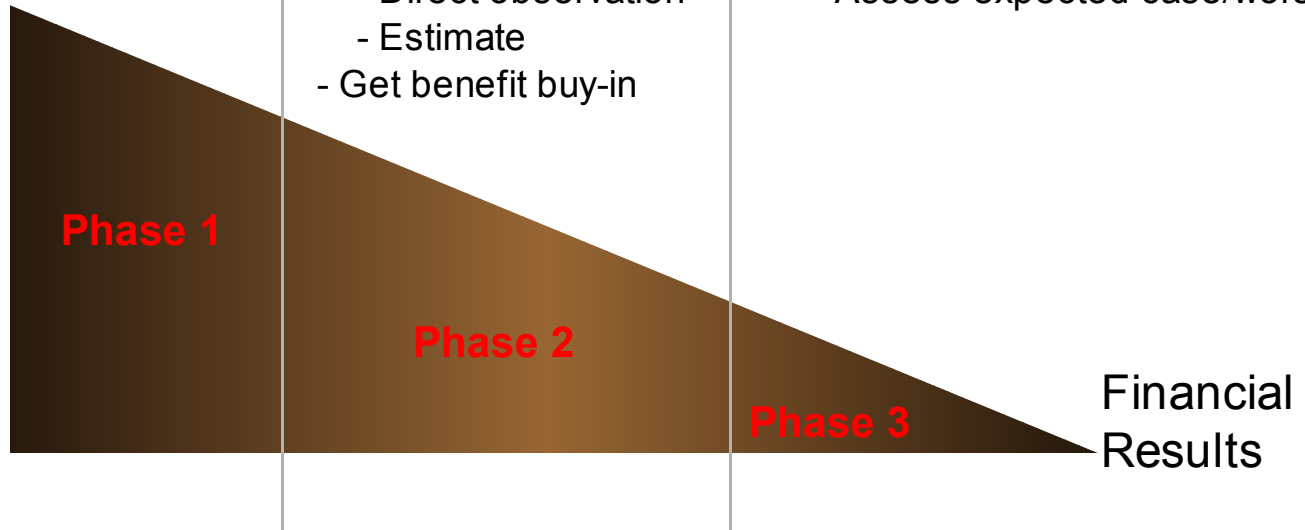
- Measure benefit areas
- Confirm values
  - Survey
  - Direct observation
  - Estimate
- Get benefit buy-in

### Assess

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

### Category Assessment

- Marketing materials
- Trade pubs
- Competition



## Three steps to ROI:

### Identify

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



### Quantify

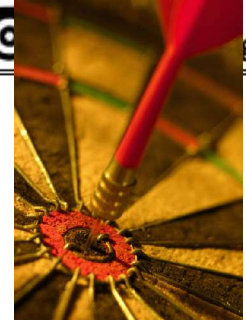
**Measure the value of the application against the components.**



### 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**

## 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!**



**POSITIVE**  
  
**ROI!**



**Document  
Management?**

## Short finance class...

**Toolbox used to measure technology:**

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

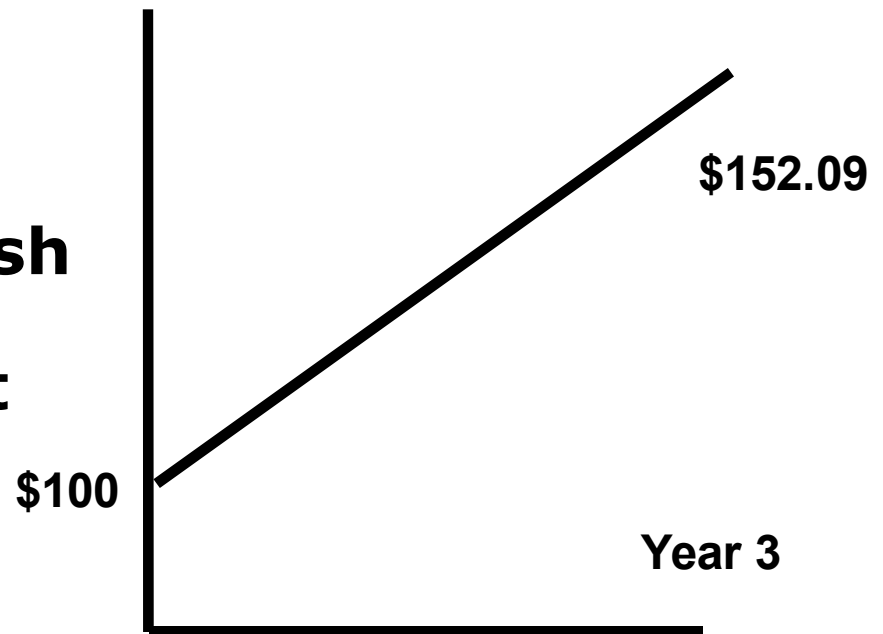


# Net Present Value

@ 15% Interest Rate

NPV

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



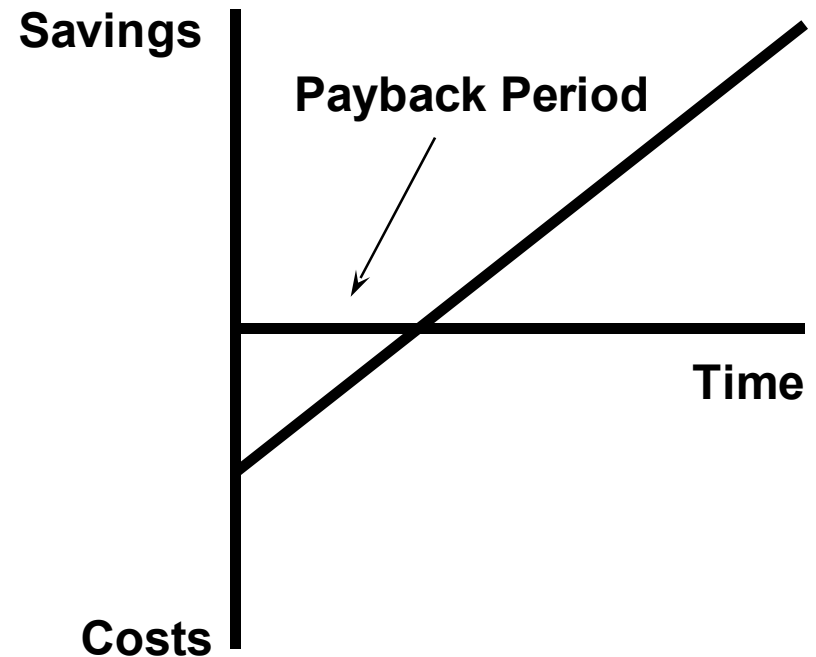
**Use a spreadsheet or a financial calculator**

# Payback Period

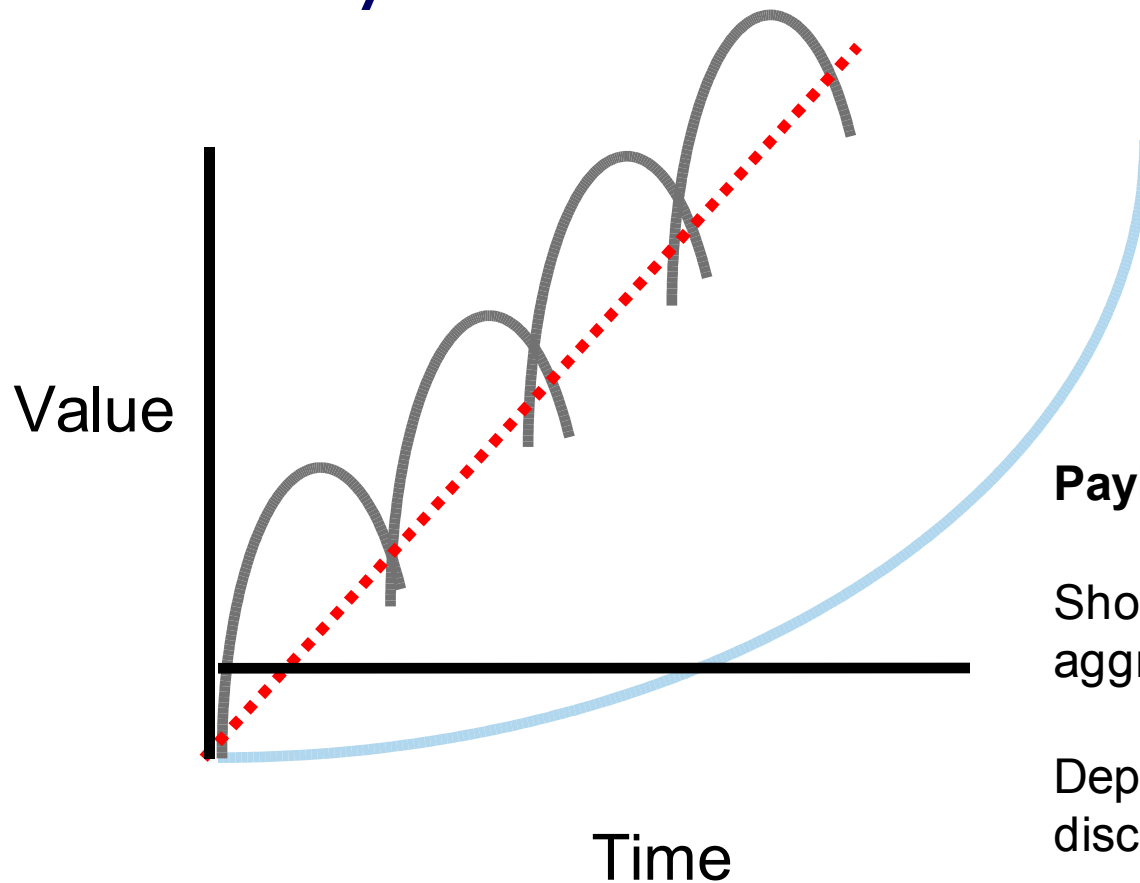
Payback

**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  $ROI = 0$**

Short payback periods drive an aggressive deployment strategy:

Deploy today and – if necessary – discard tomorrow.

# Return On Investment

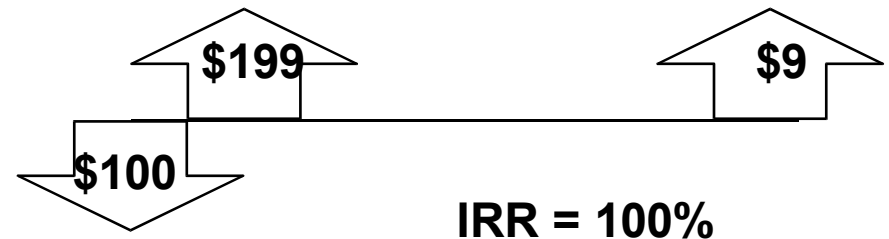
ROI

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

$$\text{ROI} = \frac{(\text{Year 1, Year 2, Year 3}) / 3}{\text{Initial Cost}}$$

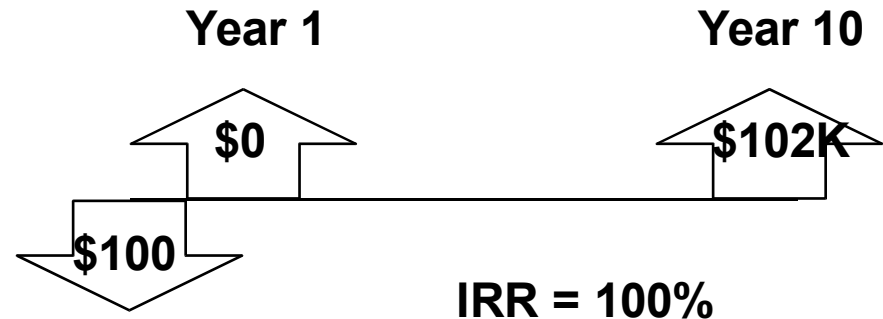
**Nucleus recommends a three year horizon but use a time period consistent with your organization's standards.**

# 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**  
 **$5 * 3 * 5 * \text{Fully Loaded Cost} = ?$**
- **Created a 10 page training guide for 50 people**  
 **$50 * 10 * .07 = 35$**

## 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





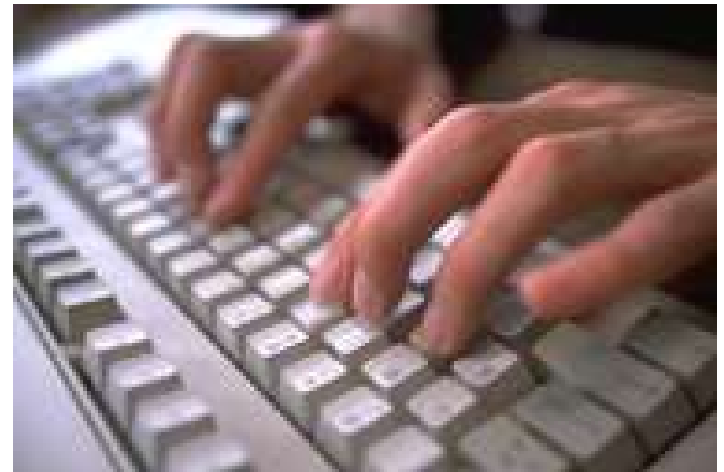
## Benefit examples - directly quantifiable

- **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**

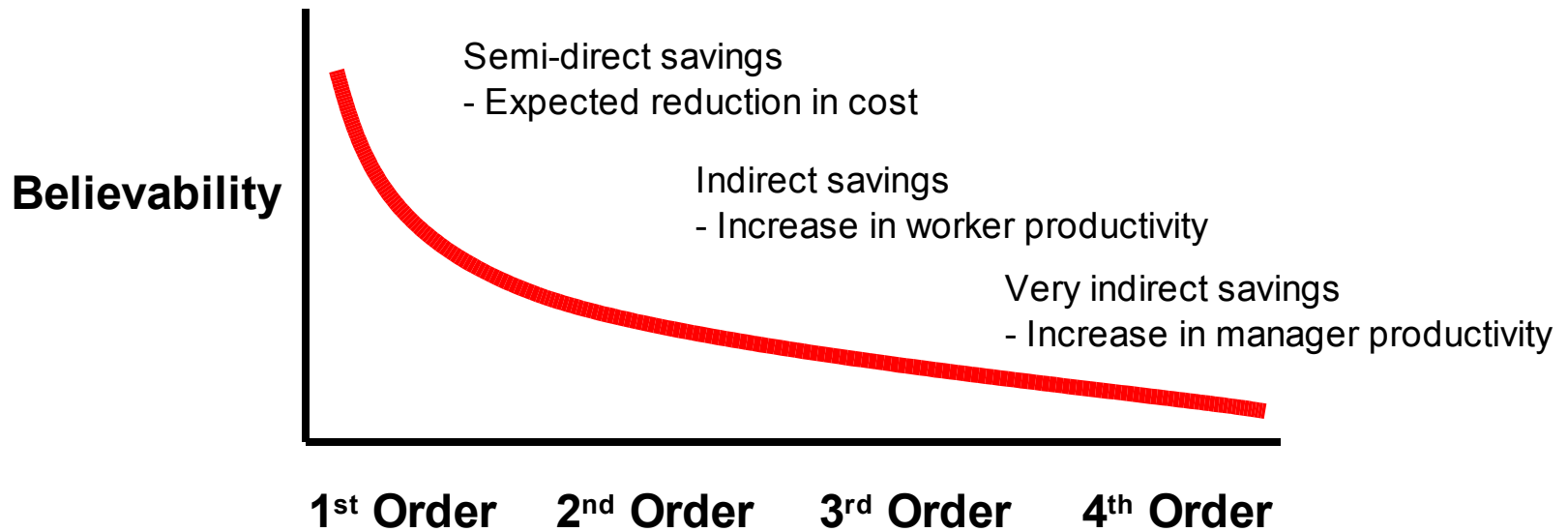
# Types of benefits

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



## Techniques for measuring benefits

Good



Bad

- **Direct observation – pilot site**

- **Corporate history**

- **Surveys**

- **Case studies**

Always do a worst-case assessment ↓

- **Benchmark data**

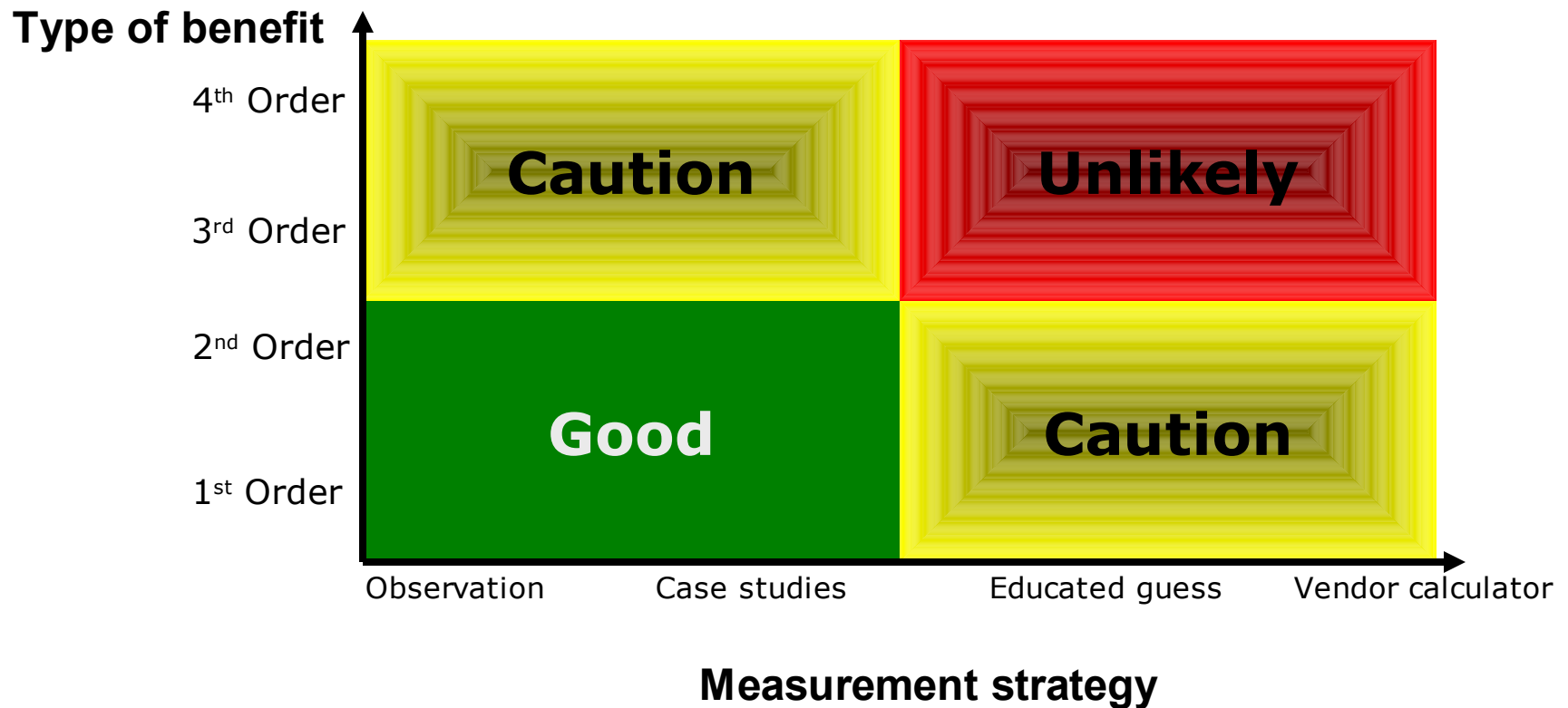
- **Educated guess**

- **Uneducated guess**

- **Psychic**

- **Vendor-supplied estimates**

# Benefit achievability



## 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?**

## 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](http://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**