


**MakingITclear**

## How to Make IT More Successful in Your Nonprofit



**Harwell Thrasher, MakingITclear, Inc. Author of *Boiling the IT Frog: How to Make Your Business Information Technology Wildly Successful Without Having to Learn Anything Technical***

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## My Background

- 35+ years working in Information Technology (IT)
- Digital Equipment Corporation
  - Developed MRP for 29 DEC manufacturing plants
- Control Data Corporation / Ceridian Corporation
  - Designed and developed an Enterprise Resource Planning product
  - Reengineered numerous business processes
  - Led the design of Internet-based payroll product
  - Handled technology due diligence for 21 acquisitions
  - "Technology translator" who explained technology issues to business executives
  - Vice-President of Technology Architecture & Strategy
- Founded MakingITclear, Inc. in 2002

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## Technology versus Magic

- "Any sufficiently advanced technology is indistinguishable from magic."
  - Arthur C. Clarke
- In Magic, we expect
  - A mystical language
  - The impossible
- Therefore, we
  - Don't expect it to follow logic
  - Don't apply our common sense.

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## Technology as Magic can get you in trouble

- Unreasonable trust
  - DEC MRP example: Order quantity calculation
- Illogical thinking prompted by computer systems
  - Best Buy example: exchanging a DVD
- The attraction of wizardry
  - Delta Airlines example: changing a ticket

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## Gartner "Hype Cycle" Example



Source: Gartner "Understanding Gartner's Hype Cycles, 2007" by Jackie Finn and Alexander Linden (June 2005)

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## Two Different Aspects of "Magic"

1. "Magic" systems make people give up their common sense
2. Inflated expectations of new technology make people distrustful when they discover the reality of the technology

- Moral 1: Stay grounded and be skeptical. There is no real magic in IT
- Moral 2: If the basic principles underlying a technology or system can be clearly explained to the users, then false expectations can be prevented.

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## What Can *You* Do about Magic in your Organization?

1. Do a "Magic Audit"
2. Look at your policies on magic
3. Take a "Wizard Inventory"
4. Identify your technologies on the Hype Cycle

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## 1. Do a Magic Audit

- Go through all your systems — or at least the key ones — and ask the system users to explain:
  - Where system results come from,
  - How they know that the results are right or wrong, and
  - What happens to the data they enter

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## 2. What's Your Policy on Magic?

- Look at your company's policies for situations where one of your computer systems tells a customer-facing person to do something that's not the best thing for the customer.
  - Does the customer-facing person have the capability to do the right thing anyway?
  - How often does the situation arise?
  - Should the policy be changed?

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## 3. Take a Wizard Inventory

- For each major system, identify the Wizards (the people you go to when you have a difficult problem with the system)
- How are these wizards (especially the higher-level wizards) involved in the design of system enhancements or replacement systems?
  - The wizards aren't involved at all
  - The wizards are in charge
  - Something in between

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## 4. Where are your technologies on the Gartner Hype Cycle?

The graph plots visibility on the y-axis and maturity on the x-axis. A curve starts at the origin, rises to a peak, falls to a trough, rises again to a plateau, and then levels off. Key points on the curve are labeled: 'Technology Trigger' at the start, 'Peak of Inflated Expectations' at the top of the first rise, 'Trough of Disillusionment' at the bottom of the first fall, 'Slope of Enlightenment' at the start of the second rise, and 'Plateau of Productivity' at the end of the curve. Above the curve, text reads 'Don't Join In Just Because It's "In"' and 'Don't Miss Out Just Because It's "Out"'. Below the curve, text reads 'Positive Hype' and 'Negative Hype'.

Source: Gartner "Understanding Gartner's Hype Cycles, 2005" by Jackie Fern and Alexander Linden (June 2005)

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## If IT isn't Magic, then what is it?

- Hint: It isn't about software, hardware, networks and systems

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IT is all about:

- Infrastructure,
- Projects,
- Maintenance,
- Strategy, and
- Trust

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Trust is the Most Important

- If your IT organization doesn't have a mutually trusting relationship with its users/customers,

then IT won't be successful,

no matter how successful you are with every other aspect of IT

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What is it about IT people that makes trust difficult?

- Focused on the how -- not the what
  - So most errors are caused by doing the wrong things, not by doing things wrong
- Use a different language that can intimidate non-IT people
  - But most IT people are just as intimidated by the language of business

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IT People (cont'd)

- Have trouble netting it out: summarizing a situation down to the salient points
  - So be patient and keep asking questions until you understand
- Fond of three and four letter acronyms
  - Don't be intimidated—ask what it means if you think it matters

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Talking to IT is like Talking to a Medical Doctor

- Doctors have deep knowledge of their specialty
- Some doctors find it hard to explain medical issues to the non-medical person. The best ones use analogy and simple explanations.
- Not everyone is working toward achieving the same goals
  - Get agreement on goals, then work backward from the goals

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Key Messages about IT People

- Underneath it all, they're just people
  - And they like to be treated as individuals
- It may sound like they speak English, but be careful—familiar words may have a different meaning in IT

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### Beware of IT Language

	Business hears	IT hears
"Project"	Everything necessary for the business deliverable, including design, build, train, document, implement, and add any infrastructure required	Just software development
"Completed Third Quarter"	Fully implemented and operational July 1 <sup>st</sup>	Software "code complete" September 30th

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### How IT Can Build Trust

- Clarify; simplify; use business language
- Under-promise and over-deliver
- Be consistent
- Think like your customers
- Communicate both good and bad news

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### How Business Can Build Trust

- Focus on:
  - Results
  - Process changes you would like to achieve
- Suggest ideas on how to do something in IT, but recognize that they may not be applicable
- Don't over-specify an IT solution
- Motivate an IT organization by measuring its contribution to *business* success.

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### How to motivate IT people

- Tie their success directly to business success, and make it clear to them (and everyone else) how success is measured
- Reward them when they, and the business, are successful
- When things go wrong, look for process problems, not scapegoats

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### IT is all about

- Infrastructure,**
- Projects,
- Maintenance,
- Strategy, and
- Trust

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### Infrastructure Secret 1

- There is no "right" amount of money to spend on infrastructure
- What companies spend on hardware and software is directly related to
  - Risk
  - The depth of their pockets

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### Infrastructure Secret 2

- The fewer Information Technology products you have, the better off you'll be, as long as you've chosen good products.

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### Infrastructure Secret 3

- Almost any software and hardware will work in the short term, but you'll see the difference in the long term.
  - Difference appears in training cost, support cost, compatibility with other software and hardware, scalability to larger volumes, ease of integration with other software and hardware, and in the viability of the vendor

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### Infrastructure Secret 4

- If you're going to use off-the-shelf software, then use the business processes that come with it.
  - Differentiate between a reason (why you are a certain way) and an excuse (why you stay that way)

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### Infrastructure Secret 5

- Biggest revolution in IT in years is in the area of middleware, integration broker technology, and web services
  - Example: 20 systems requires 190 system interfaces, but only 20 interfaces if you use an integration broker

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### Two Ways to Select Projects

- Top Down  
Choose a project because it contributes to a major business goal
- Pick the Best  
Compare all projects and choose the ones that have the highest number score (e.g., ROI)

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### "Pick the Best" is Difficult

- ROI only works in theory
- Project interdependency causes problems when you approve a project but not its prerequisites
- Infrastructure improvement projects usually hard to justify
- Development estimates are usually wrong

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### Project Success is Uncommon

- In 2006,
  - Only 35% of software projects were completed on time and within budget
  - 19% of software projects were abandoned
- In 1994,
  - 16% of software projects were completed on time and within budget
  - 31% of software projects were abandoned

Source: Standish Group studies, and 3/1/2007 *SD Times*

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### Biggest Reasons for IT Project Failure (in my experience)

- Starting the wrong project
- Not including prerequisite steps
- Going for home runs instead of base hits
- Project duration greater than the job tenure of the sponsoring executive
- "Gathering" requirements instead of *negotiating* them
- Not enough contingency planning

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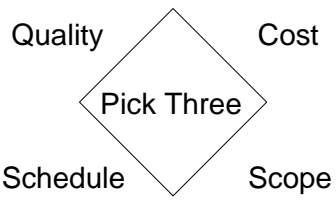
### Once you've picked a project, how do you make it succeed?

- QCSS
- Simplicity

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### QCSS – Critical to Project Success



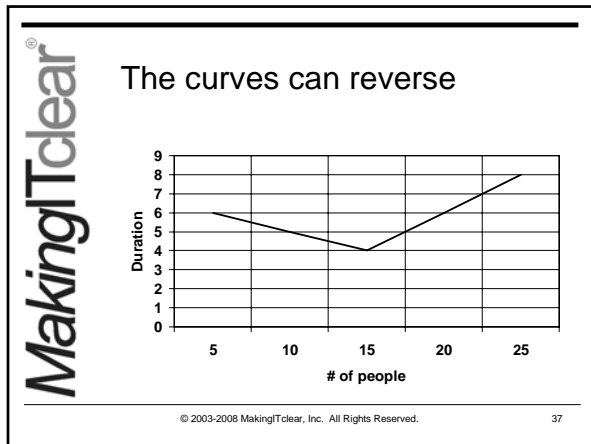
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### The variables have non-linear relationships

- Examples:
  - Having a baby
  - Painting a room

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### Example of real life non-linearity on a project

Peak Staff	Schedule (Months)	Cost (\$)	Defects Remaining
6	13.6	416,000	6
9	12.3	623,000	9
14	11.3	875,000	14
24	10.2	1,300,000	25
33	9.5	1,700,000	33
66	8.3	3,000,000	66

Source: The Software Genome Council

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- ### Key Messages from QCSS
- Users must emphasize the QCSS variables that are most important, and accept the outcome on the other variables
  - My own recommendation: Do things with high quality in small steps
    - High quality
    - Small scope
    - Therefore short schedule and reasonable cost
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- ### Simplicity – Another Key to Project Success
- There is a lot of complexity in IT
  - But things are more complex than they have to be
  - The complexity only increases the magic and wizardry of the IT organization, and does nothing for the customers
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- ### Simplicity Recommendations 1
- Focus on making things simpler. Keep asking "Is there a simpler way?"
    - Sometimes the easiest techniques are the best  
Example: paper mock-ups of computer screens used for user prototyping
  - Follow the 80-20 rule in systems design
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- ### Simplicity Recommendations 2
- Keep project and system scope in check
    - Scope hard to relate to "common sense" - sometimes small scope change can have huge impact on the project
      - Building design example: moving a bathroom
  - If you have to increase scope in one area, try to find another area to decrease
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### Simplicity Recommendations 3

- Build systems in layers, with standardized interfaces between the layers
  - Makes technology upgrading easier
  - Makes system-to-system integration much easier

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### IT is all about

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### Maintenance

- Like farming: uncultivated fields don't need maintenance, but once you add more cultivated land, you have to spend effort every year to keep it up

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### Projects Decline over Time as a Percent of Total IT Budget

The graph shows three lines on a coordinate system where the vertical axis is labeled from 0% to 100% and the horizontal axis is labeled 'Time'. The 'Projects' line starts at approximately 80% and slopes downward. The 'Infrastructure' line starts at approximately 10% and slopes upward. The 'Maintenance' line starts at approximately 10% and slopes upward more steeply than the Infrastructure line. The lines for Infrastructure and Maintenance cross the Projects line at different points in time.

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### Hardware Maintenance

The graph plots 'Original Capability' on the y-axis (0% to 120%) against 'Time' on the x-axis. A single line starts at 100% and curves downward as time progresses. An upward-pointing arrow labeled 'Effort' is positioned at the end of the curve, indicating that as capability drops, more effort is required to maintain it.

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### Software Maintenance

The graph plots 'Original Capability' on the y-axis (0% to 350%) against 'Time' on the x-axis. A single line starts at 100% and curves upward as time progresses. An upward-pointing arrow labeled 'Effort' is positioned at the end of the curve, indicating that as capability increases, more effort is required to maintain it.


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Do we expect this sports car



To be capable of transforming into this van if our business requirements change?

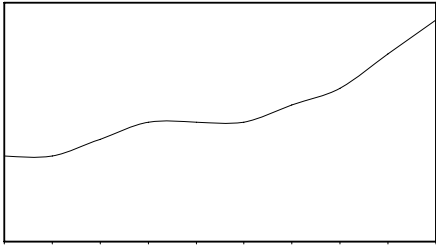


Not for hardware,  
But people expect that for company software!

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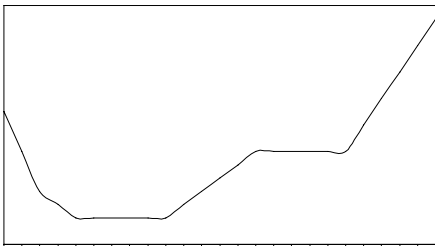
### Hardware Maintenance Expense over Time



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### Software Maintenance Expense over Time



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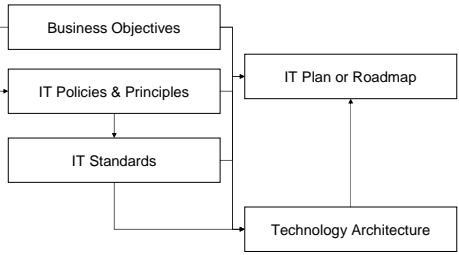
### Strategy

- The element of IT most often forgotten
- Think of systems as buildings, and strategy as city planning
- IT Strategy is what differentiates average IT from great IT

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### What does an IT strategy look like?



```
graph TD; BO[Business Objectives] --> ITPlan[IT Plan or Roadmap]; IPP[IT Policies & Principles] --> ITPlan; ISS[IT Standards] --> ITPlan; TA[Technology Architecture] --> ITPlan; BO --> IPP; IPP --> ISS; ISS --> TA;
```

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### Example

Business Objectives

Be known nationally for design
Strengthen presence in existing markets
Strengthen relationships with clients by extending service in existing markets
Selectively and intentionally enter new markets
Open an office in another region
Strategy will drive operations
Advance IT systems

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### What does an IT strategy look like?

Business Objectives

IT Policies & Principles

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### Example

IT Policies & Principles

Provide remote access equal to the access available in the office
Use the Windows/PC platform
Use a few named standard licensed software packages from third-parties instead of developing software within the company
Keep everyone on current or one-back versions of software, to ensure adequate support from vendors and to ensure compatibility among users
With the exception of Microsoft Office, Lotus Notes, Adobe applications and CAD, use a browser-based interface for all software used by employees
Etc.

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### What does an IT strategy look like?

IT Policies & Principles

↓

IT Standards

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### Example

IT Standards

Macintosh	Retire by the end of 20xx
Windows XP Professional SP2	Standard – order on all new PCs
Windows Vista	Evaluate for future use
Microsoft Office	Standard
Open Office Suite	Evaluate for possible future use
Etc. (specific to all hardware software, and including specific versions)	Status, including retirement dates

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### What does an IT strategy look like?

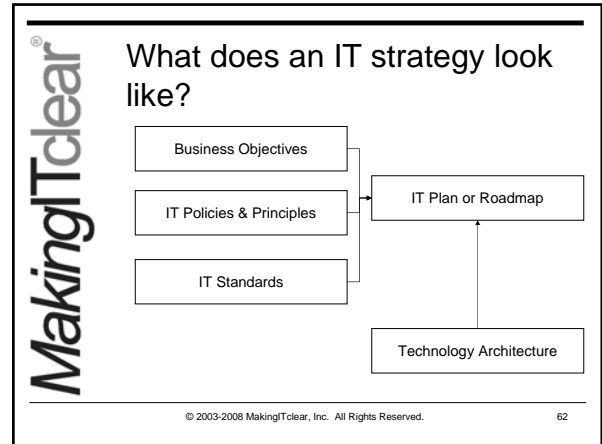
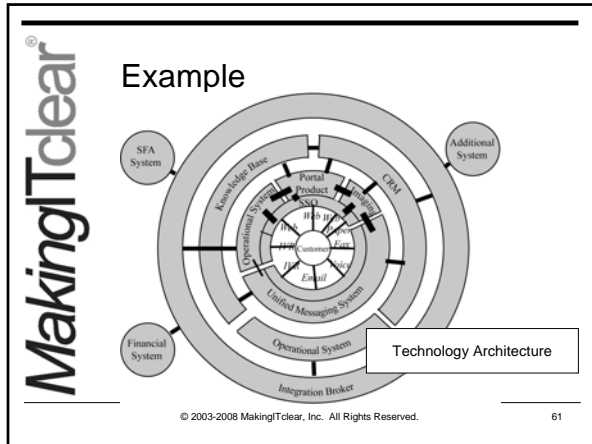
Business Objectives

IT Policies & Principles

IT Standards

Technology Architecture

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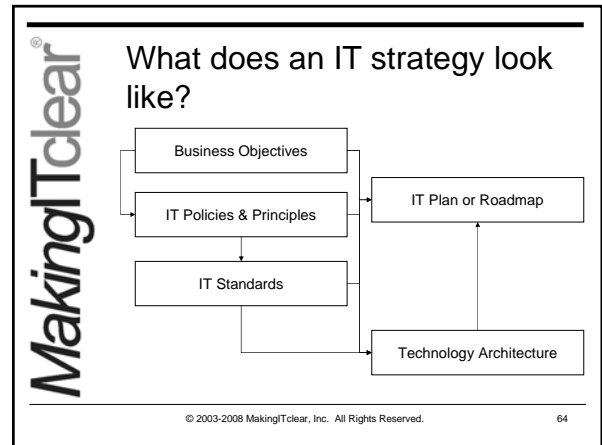


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Objective	By Date	By Whom
Phase out Macintosh	12/31/xx	Xxx
Intranet Phase 1 available to all	Xx/xx/xx	Xxxx
VPN available to all	Xx/xx/xx	Xxxx
Etc.		

IT Plan or Roadmap

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- MakingITclear** Recap
- Magic in IT isn't a Good Thing
  - Without Trust, IT is Useless
  - The Five Biggest IT Infrastructure Secrets
  - Why ROI Isn't the Best IT Project Selection Method
  - The Six Biggest Reasons for IT Project Failure
  - QCSS & Simplicity to focus your project efforts
  - Software Maintenance isn't Like Other Maintenance
  - The Five Key Components of an IT Strategy
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You can't make IT successful by improving the Information or the Technology.


You make IT successful by improving the way you deal with people, processes, and change.

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**Q & A**

- For more on the material in this presentation, see my book, available on Amazon.com
- For additional information (including book lists and white papers) and for a free subscription to my monthly email newsletter, visit [www.makingITclear.com](http://www.makingITclear.com)
- Additional questions or inquiries to:  
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