

# " Finding Value From Health Care IT Investments"

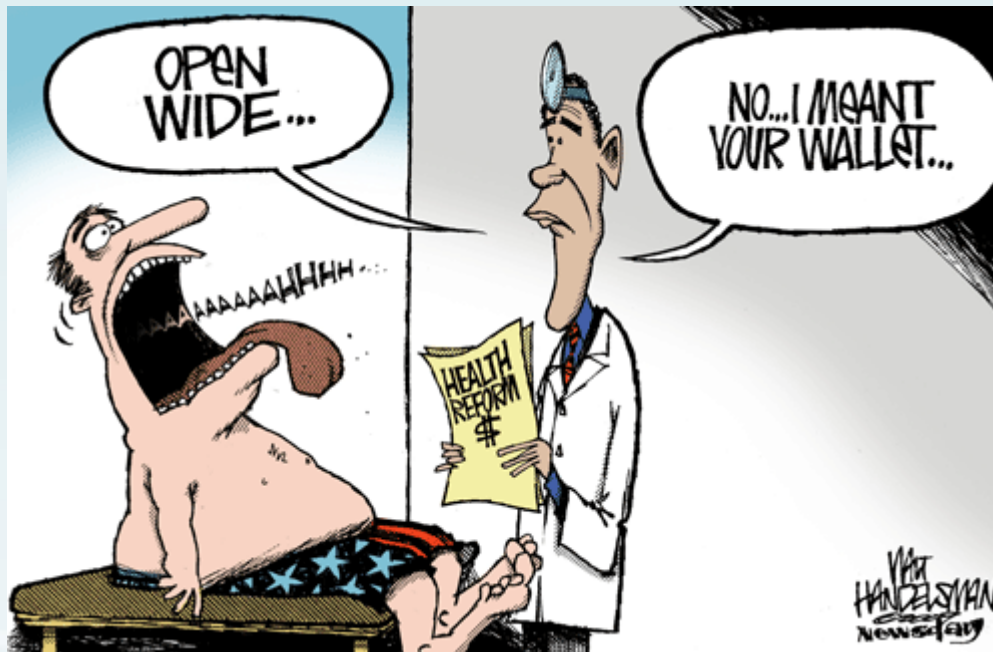
Reynold O. Bryan, Jr.  
Managing Principal



# Objectives

- Why is ROI elusive in health care IT investments?
- Identify the challenges of investing in IT purchases without an ROI model.
- Learn how to develop an ROI model for IT investments for your organization.
- Understand key factors in applying this model to your organization's IT investments.

# Health Care Reform



# Historical IT Investments in Healthcare

1960's-Investment in financial systems

1970's-Investment in departmental systems (i.e. radiology, clinical laboratories, pharmacy, etc.)

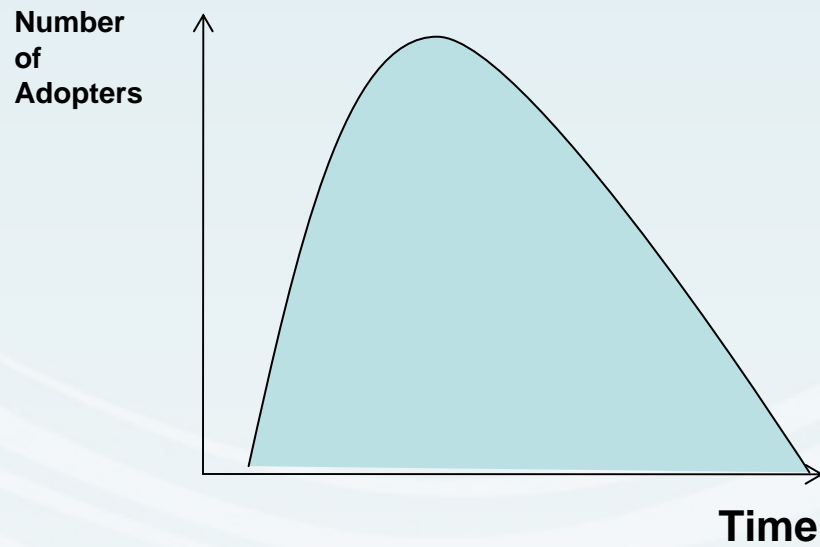
1980's-DRG management and materials management systems

1990's-Enterprise wide clinical systems

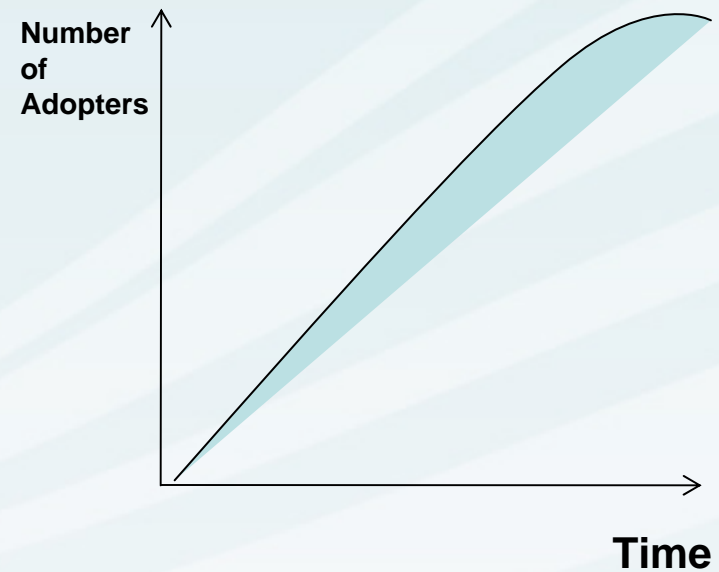
2000's-Quality reporting systems

# Healthcare Technology Adoption Cycle

## Most Industries



## Healthcare



# Three Distinct Health Care IT Adoption Cultures

Innovators	Pragmatists	Mainstreamers
Rare in healthcare	Well-connected among their peers	Anxious leadership
Led by entrepreneurial thought leaders	Prefer a slower incremental approach	Buy technology to stay competitive or to address regulatory issues
View technology as a strategic asset	Accept risks	Risk adverse
Have a vision	Understand potential ROI of technology	Slow change cycle
Define best practice	Need “quick wins”	Lacks strong governance
Willing to take calculated risks	Achieve success as a result of detailed planning	Limited experience with process improvement
Adroit at technology adoption	Investment in resources	Few bridges between IT and business operations
ROI difficult to replicate in other cultures	Executive Level Ownership	Greatest Potential for ROI
		Rarely Invest what is required for success

# Value Realization Planning Dimensions by Culture

Innovators	Pragmatists	Mainstreamers
Skilled at Visualizing Business Value	Creators of the Business "Solution"	Wait and See

# Why is ROI elusive in health care IT investments?

- HIT ROI is complex and multi-faceted
- HIT ROI cannot be measured in quantitative terms only
- HIT Investment Requires
  - Extensive Redesign of Processes
  - Change in Organizational Structure
  - Change in Staff Behavior
- Strategic Information Systems Plan (SISP) are sometimes static (i.e. current client working from 10 year old SISP not updated)

## ROI Definition

- Return on Investment (ROI) is the percentage return expected over a specified period of time.
- ROI is the total benefit minus the total costs in years 1-3 divided by the total costs of the investment.
- The ROI metric is good for assessing the net value benefit of the project relative to the initial investment.

# ROI in Healthcare IT

- ROI in increased healthcare quality
- ROI in money
- Saved time – access to data, readable data, efficient work processes
- Saved costs – drugs, frequency and length of hospitalization
- ROI in patient safety and quality
  - reduction in patient care and medication errors
  - more efficient treatment
  - ability to harvest data and improve the treatment
  - all of these also have potential economic benefit
- Competitive Advantage-recruitment of physicians, nurses and other ancillary medical providers
- Branding and Marketing of cost savings and increased patient quality of care

## Return on Investment (ROI) Analysis Consists of Three Key Steps

- Identify and Quantify Costs
- Identify and Quantify Benefits
- Consistent Comparison of Cost and Benefits

Capital Costs

Operating Expenses-Direct

Operating Expenses-Indirect

## Payback Period

- **Payback Period (or breakeven) is the time it takes for the project to yield a positive cumulative cash flow. It is a key measure of risk but does not take into account cash flows after the payback period.**

# Net Present Value

- **Net Present Value (NPV) represents the cumulative present value of the expected return of a project over a specified period of time minus the initial costs of the project.**
- **This dollar figure provides visibility on the actual value of a project, taking into consideration the time value of money – the ongoing benefit of a project in today's dollars.**
- **NPV reflects the magnitude of the project and demonstrates whether the project generates a profit.**

# Internal Rate of Return

- **Internal Rate of Return (IRR) is the implied rate of return of an investment assuming complete reinvestment of cash flows. It is the percentage rate by which the benefits are discounted until the point that benefits are equal to the costs. IRR is calculated as the discount rate necessary to drive the NPV to zero.**

# Net Value

- **Net Value is the benefit delivered to the organization for the investment made in the project. It is calculated by taking the total benefit minus the project costs.**

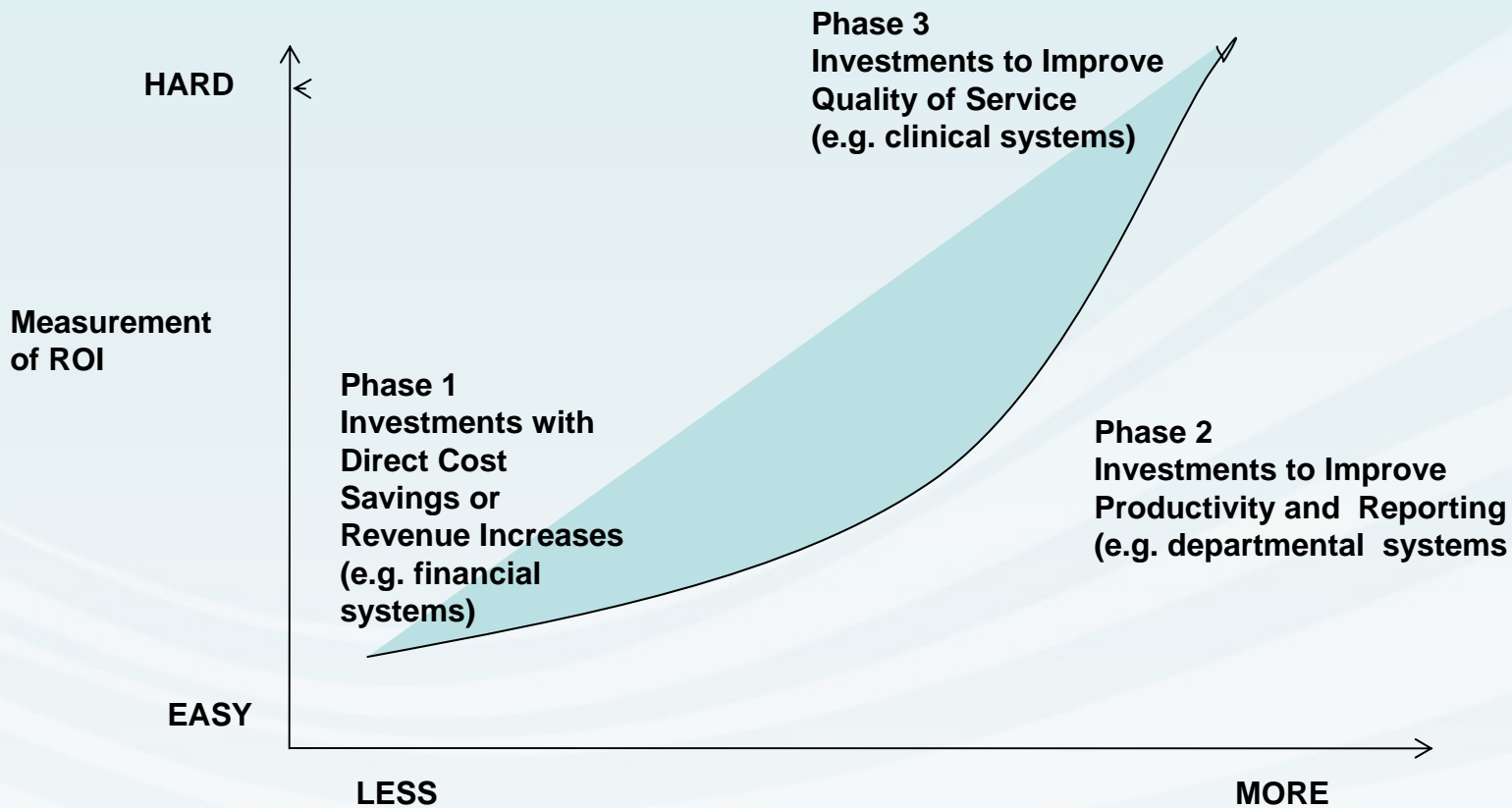
# Comparison of Measurement Tools

Measure	Easy to Compute	Easy to Understand	Accounts for how quickly investment recovered	Account for magnitude of ROI as % of initial investment	Accounts for magnitude of return in \$\$
Payback Period					
Benefits/ Cost Ratio					
Net Present Value					
Internal Rate of Return					

## Implications for ROI Measures

- An institution will look worse before it looks better
- Baseline measures should be chosen wisely
- The ROI horizon should be selected carefully
- Spike in adverse events usually means hospital has not adopted culture of safety

# Relationship of Ease of ROI Measurement and Complexity of Environment



# Expense versus Value Center

Expense Center	Value Center
IT is an expense to be managed	IT is a driver is strategic value
Cost is the primary metric	Multiple criteria measure IT value
It is deployed to support operations	IT is an investment & a strategic asset to be leveraged
IT operations reflect captive internal monopoly	IT operations acts as solutions integrator for business requirements
Short Term, budget cycle time frame	Long tem, multi-year planning horizon

## Why is ROI elusive in health care IT investments?

- Multi-faceted analysis required
- Define, identify ,quantify and assess three levels of benefits (i.e.tactical, process and strategic levels
- Do the Math!-Four quantitative measures of ROI
- Be open to discover approaches to quantify intangible benefits

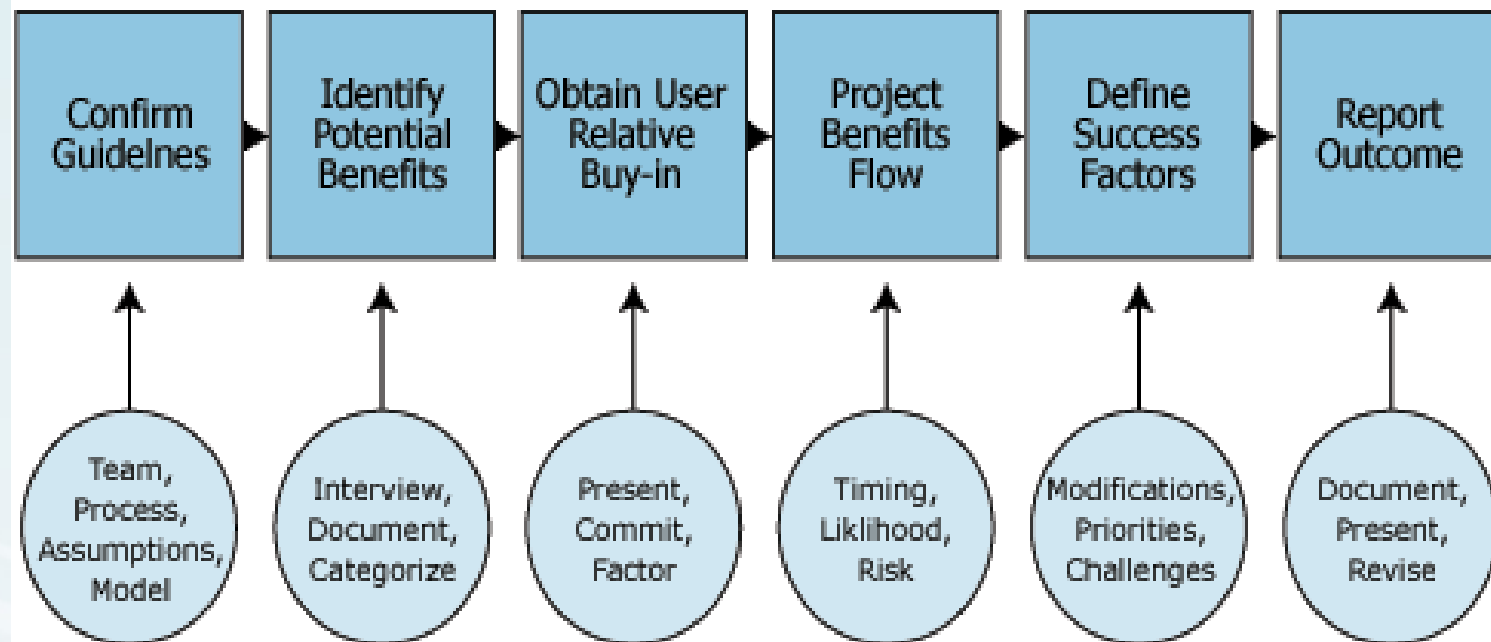
## Reasons Not to Measure Technology ROI

- “I don’t want to be held to a higher standard than the rest of the organization”
- “The CIO can’t control realization of benefits; only the business operating manager can”
- “You put yourself at risk by projecting benefits that you may not be able to achieve”
- “Benefit calculations are inherently biased and difficult to quantify”
- “With Clinical Systems, we need to just ‘do it’. Why waste our time with measurement?”

Learn how to develop an ROI model for IT investments for your organization.

- Identify and quantify capital, direct and indirect operating costs
- Define and Assess three levels of benefits (tactical, process and strategic)
- Calculate four defined quantitative measures of ROI
- Quantify Intangible benefits

# Develop an ROI model for IT investments for your organization



# Identification of Costs

1. Vendor estimates for hardware, software, maintenance, support, implementation and training
2. External consulting projections for process redesign and implementation-Almost always underestimated (i.e. 3X+)
3. Internal Cost for project staffing and ongoing support
4. Avoid vendor tricks of taking monies from one bucket and placing it into another
5. Vendor led implementations have no value based metrics measured-Typically “fool’s gold”

# Identification of Benefits, Tangible and Intangible

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- Enterprise ROI: Business Strategy
- Stakeholders
  - Outcomes
  - Marketing
  - Finance

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- Programmatic ROI
- Work Process Redesign
- Support

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- Tactical ROI-benefits through Automation
- Cycle time reduction
  - FTE Savings
  - Supply Savings
  - Error elimination

Magnitude of Benefits

# Identification and Quantification of Cost

## Example-Closed Loop Medication Administration

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Costs						
Hardware	\$575,000	\$175,000				
Software	\$850,000	\$200,000				
Process Redesign	\$285,000	\$95,000				
Implementation Training	\$375,000	\$225,000				
Salaries	\$9,750	\$24,984	\$51,218	\$78,748	\$107,622	\$110,312
Licenses, maintenance and support	\$120,000	\$200,000	\$206,000	\$212,000	\$218,545	\$225,102
Depreciation		\$208,500	\$278,000	\$278,000	\$278,000	\$278,000
Total Costs	\$2,214,750	\$1,128,484	\$535,218	\$568,928	\$604,167	\$613,414

# Return on Investment Summary Example- Closed Loop Medication Administration

<b>Payback Period</b>	<b>4.41 years</b>
Benefit Cost Ratio	1.44
Net Present Value	\$888, 769
Internal Rate of Return	21%

Understand key factors in applying this model to your organization's IT investments.

- Key Factors

- Organizational Readiness
- Executive sponsorship
- Change supportive culture
- Accept the organizations position as healthcare IT adopter
- Measure all that you can!

# Success Factors Required for Health Care IT Investments

- C-Level Commitment
- Proper Project Planning
- Physician Buy-In
- Business and Clinical Workflow Alignment
- Implementation Expertise

# “Truth Be Told”

- Formal ROI analysis is rare in healthcare
- Healthcare IT vendors provide “very rudimentary” ROI analysis
- Peer-to-Peer exchanges regarding how they measure and quantify hard and soft benefits are helpful
- Hire an accountant or consultant to assist with ROI analysis
- Who in the IT vendor company has investment skills background to provide formal ROI analysis (i.e. sales manager, VP of sales, client executive, etc.) ?
- Pre-determined implementation methodology means no value based metrics are being measured

# Questions and Answers

# Thank You

## Contact Information for Speaker:

Reynold O. Bryan, Jr.

Managing Principal

Healthcare Margins, Inc.

(415) 722-2058

Reynold\_Bryan@healthcaremargins.com