



Can We Really Measure Training ROI?

(Do We Really Want To?)

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Purpose of this Session. . .



1. Examine advancements in models that approach training ROI systematically and rigorously in order to gain a truer measurement of training impact.
2. Provide ways for training providers to confidently provide data that supports justification of training from a business perspective.
3. Describe how training program design should start with business results and not learning objectives.
4. Distinguish between predictive and retrospective measurement.

The Kirkpatrick Model

Level	Type of Measure	Focus
1 Reaction	Satisfaction	Learner satisfaction with the program
2 Learning	Learning, Attitudes	Principles, facts, techniques
3 Behavior	Behavioral change	Changes in job behavior
4 Results	Results	Tangible results – cost, quality, quantity

Origin of "Training ROI"



- ◆ Key proponent – Jack Phillips
 - ◆ Expressed as a ratio / percentage
 - ◆ $\% \text{ ROI} = (\text{Net Benefits} / \text{Costs}) \times 100$
- ◆ Level 5 measurement
 - ◆ Effort to speak the vernacular
 - ◆ Gain acceptance & credibility



Why ROI?

About \$5.6 billion to \$16.8 billion is wasted annually on ineffective training programs

“American industry is spending billions and billions on training programs and doing no evaluation of their effectiveness. You have to measure it.”

- Cary Cherniss, Rutgers University



Why ROI?

A study of 15 countries in the Organization for Economic Cooperation and Development found that the majority of enterprises believe employee training is responsible for "productivity improvements, greater workforce flexibility, savings on material and capital costs, improved quality of the final product or service, and a more motivated workforce."

However, many companies have not measured the benefits and related them to the cost of training in a way that reveals the rate of return on a firm's investment. Apparently there is no other workplace issue on which so much money is spent with as little accountability as training.

Myths & Realities No. 16: Return on Investment in Training, Bettina L. Brown, Center on Education & Training for Employment, Ohio State University, ERIC/ACVE, 2001

Critics of Level 5 Say. . .

- ◆ No more than a restatement of Level 4 results
- ◆ Executive management has not bought into the concept
- ◆ ROI does not measure worth or "soft" benefits, it is only one tool that can measure results (Ernst & Young)
- ◆ Accounting world does not view training as a capital investment

ROI vs Cost-Benefit Analysis

$$\text{B/C Ratio} = \left(\frac{\text{Total Benefits}}{\text{Program Costs}} \right)$$

$$\text{ROI} = \left[100 \left(\frac{\text{Total Benefits} - \text{Program Costs}}{\text{Program Costs}} \right) \right]$$

Total benefits	\$7,760,00
Program costs	\$59,080
B/C ratio	129.49
ROI	12.8

Source: Measuring Return on Investment (ROI), David P. Wegenast, D.S.W., Proceedings of the Fourth Annual National Human Services Training Evaluation Symposium, May 23-25, 2001, UC Berkeley

"Doing training ROI analysis is a fancy way of doing cost-benefit analysis." - Olga Bulatova, Direct of Ernst & Young Professional Education Center in the CIS Countries

No two models are alike. . .

Showing That Enterprise Training Pays Off, Janelle Moy, NCVET

author/s	overview of approach
Davidson et al. (1997)	Presents enterprise frameworks and techniques to assist Australian enterprises in evaluating returns from their investment in training.
Unger and Rutter (1997)	Strategic Training Evaluation Model (STEM).
Beaton and Richards (1997)	A guide and toolkit developed to promote an understanding of the benefits to United Kingdom organisations of investing in training.
Field (1999)	Reports on the Promoting Added Value through the Evaluation of Training (PAVE) Evaluation Resource Pack.
Phillips (1997)	Presents an ROI process that focusses on measurement and the assignment of monetary values to training costs and benefits, together with general advice on ROI and the use of qualitative approaches.
Williams (1996)	A short but comprehensive article focussing on ROTI measurement issues from a practitioner perspective.
Kirkpatrick (1994)	Provides information, tools and examples based on the application of the four-level Kirkpatrick Model.
Carnevale and Schulz (1990)	Two evaluation frameworks are presented: the Consensus Accounting Model and the Kirkpatrick Model, together with a range of practical approaches used by large, innovative United States companies.
Leimbach (1994)	Outlines an approach called Utility Analysis, marketed by Wilson Learning.
Drake (1995)	Advocates the identification and development of 'a spectrum of outcome measures' (p.24) from immediate to more distant outcomes.
Shelton and Alliger (1993)	Presents a series of steps for calculating enterprise returns on training investment. They focus on identifying, obtaining, organising, and analysing already available data.

Most Have These In Common

- ◆ Direct & Indirect Costs Attributable to the Project or Program
- ◆ Benefits – Must be Converted to Equivalent Monetary Units
- ◆ Measurement is Absolutely Critical – Baseline & Post-Mortem
- ◆ ROI or CBA must be reserved to mission-critical programs
- ◆ Assumptions, assumptions, & assumptions

Merck Model

- ◆ Developed early-1990's in response to CEO's inquiry: "What are We Getting for Our Money?"
- ◆ Situation at Merck:
 - ◆ 1986 – \$25 million spent on training
 - ◆ 1991 - \$70 million spent on training

Merck Model (cont'd)

- ◆ Constructed its own version of the "Utility Model"
- ◆ Value of an activity is derived based on statistical information and a clear understanding of how the business operates.

In its most concise formulation, the model Merck's trainers developed for estimating the impact of a given training program is a simple equation:

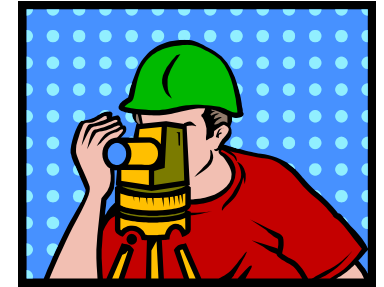
$$\text{GAIN} = d \times SD_s \times JSI \times N$$

In other words, the gain in value is driven by four factors:

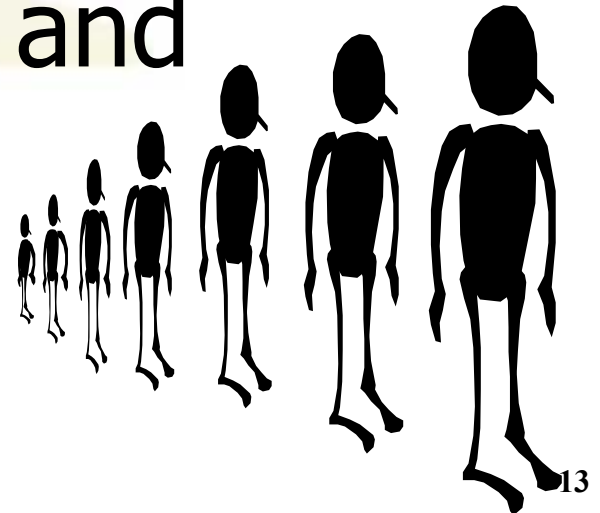
- d = Shift in performance by average individual undergoing training, expressed in standard deviations from pre-training average
- SD_s = The value (in dollars) of one standard deviation of performance shift
- JSI = Percentage of job skills impacted by training
- N = Number of participants who underwent training

Key Terms: Validity & Reliability

- ◆ Valid: measures what it is supposed to measure



- ◆ Reliable: consistent and reproducible



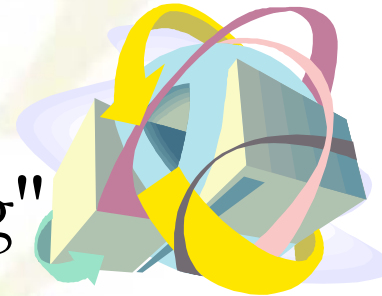
What are the trends?

- ◆ The basic Kirkpatrick, Cost-Benefit model appears to have widespread usage or application
- ◆ Predictive measurement is as crucial as retrospective measurement
- ◆ Causal analysis methods being used to link results to action
- ◆ Training design predicated by quantifying desired business results



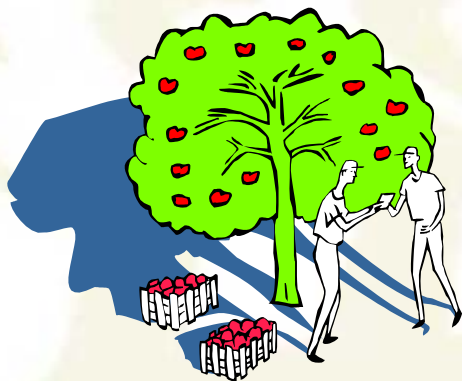
Trends (cont'd)

- ◆ Shift in emphasis:
From "training" to "learning"
- ◆ Key proponents:
Motorola, IBM & Xerox
(to name a few)



<http://www.ibmweblectureservices.ihost.com/servlet/Gate/Component?action>

Where's the Low Hanging Fruit?



Due Diligence –
training you are required
to do either by law or
mandate



Business improvement –
training provided to increase
skill capacity, counteract
performance gaps, support
business goals

For "Due Diligence" Activities, typically, the measurement is internally focused

For example....

Cost per student

Travel cost reductions

Material costs

Support costs

Emphasis is on "Cost-Avoidance" ROI



"Business Improvement" Activities are Ideal Candidates for ROI Analysis

Cost Avoidance ROI

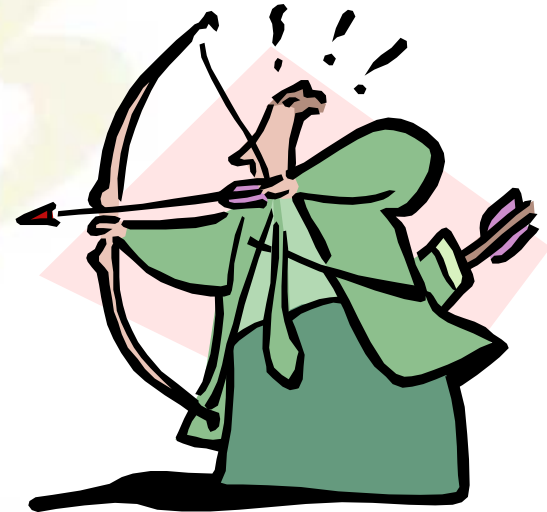
Business Benefits ROI

ROI Perspective

- ◆ Specifies desired outcomes beforehand
- ◆ Captures baseline data
- ◆ Establishes measurement criteria – what & when
- ◆ Identifies potential variables

Benefits –Target Key Areas

- ◆ Productivity & Efficiency
- ◆ Sales & Profitability
- ◆ Quality of Products & Services
- ◆ Customer Service & Satisfaction
- ◆ Health & Safety
- ◆ Organizational Learning & Development
- ◆ Organizational Climate, Culture & Practices



Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVET

Productivity & Efficiency

- o production costs per unit
- o productivity targets met/exceeded
- o production/completion time per unit (e.g. forms, loans, clients, projects)
- o output (per worked hour, per shift, per machine, or per annum)
- o overtime (quantity, cost)
- o improved innovation in products/services
- o induction time for new employees
- o productivity of new employees
- o equipment/facility/asset utilisation (e.g. down time due to machine stoppages, shift changeover time)
- o equipment maintenance (costs or repair time), or replacement costs
- o response time (e.g. to service calls or orders)
- o capacity of staff to solve routine and non-routine problems (e.g. supervision time required)
- o staffing requirements and workforce flexibility (e.g. dependence on casual/contract labour)



Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVER

Sales & Profitability



- ◆ overhead costs
- ◆ operating costs
- ◆ operating costs as a percentage of total costs/revenue
- ◆ value of contracts won, loans processed
- ◆ revenue/income/sales (monthly, annually, per employee, per team, per branch or store)
- ◆ market share (number of customers, dollars spent, unit volume sold)
- ◆ sales to new customers
- ◆ group operating profit
- ◆ profit per employee
- ◆ stock market performance (i.e. shareholder return)

Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVET

Quality of Products & Services



- o on time provision of products/services
- o wastage, reject, error or rework rates
- o conformance record with quality specifications (e.g. batch yields, throughput of invoices)
- o achievement/maintenance of quality rating
- o compliance with quality, legal and/or ethical requirements
- o achievement of quality award

Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVET

Customer Satisfaction & Services

- o customer satisfaction levels (with timeliness, availability, quality and price of goods and services)
- o customer relationships and experiences
- o repeat business (customer retention or loyalty)
- o new business resulting from client referrals
- o more/new customers or markets (e.g. contracts won, loans processed, funding awarded)
- o lost business
- o number of complaints



Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVER

Health & Safety

- o accidents or injuries (number, time lost, compensation costs, premium cost/rating)
- o safety critical incidents (number, cost)
- o compliance with safety and health requirements
- o violation of safety rules
- o improved response to crises



Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVET

Organization Learning/Development

- o performance appraisal ratings
- o achievement of organisational competency profile requirements (e.g. to meet accreditation or licensing requirements, new operating environments or facilitate organisational expansion)
- o number/percentage of employees with nationally recognised qualifications
- o internal promotions resulting from employee competence and performance
- o training awards received
- o employee perceptions of training and development opportunities
- o alignment with human resources, business and strategic planning



Source: *Showing That Enterprise Training Pays Off*, Janelle Moy, NCVER

Organization Culture/Climate

- o employee retention/turnover/recruitment (e.g. numbers, costs)
- o absenteeism
- o disputes/grievances (number, cost or time lost)
- o number of employee suggestions (submitted or implemented)
- o employee satisfaction and motivation
- o interpersonal relationships and commitment to team goals
- o participation in teams and committees
- o team performance
- o internal communication and information systems
- o implementation of new work practices
- o standardisation of work practices
- o implementation/maintenance of a service culture
- o contribution to re-engineering and refocussing of enterprise



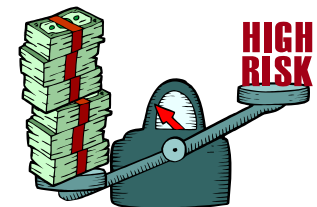
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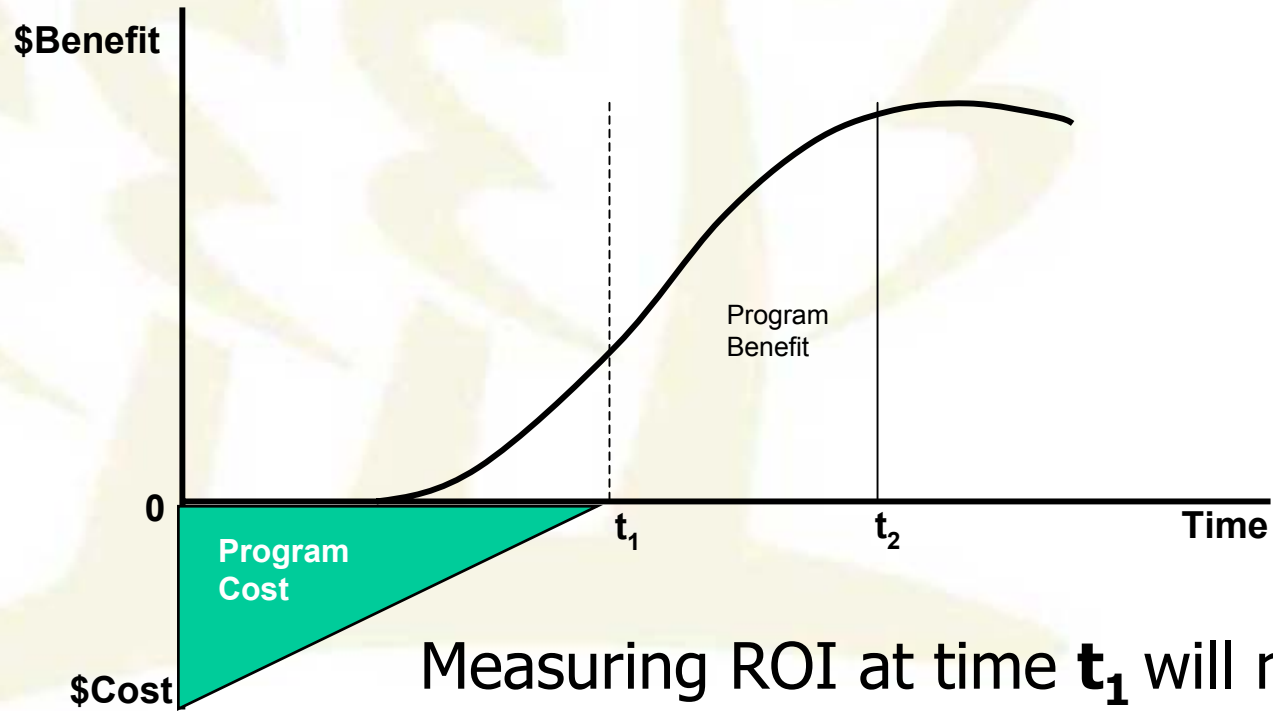
ROI Starts with FEA

- *First & foremost:* determine if there is a problem or a performance gap worth doing something about
- Quantify the cost of the problem
- Specify a solution that costs less than the problem
- Specify the outcomes of any training intervention to be applied
- Set up your measurement methodology – validity & reliability



It's like risk analysis

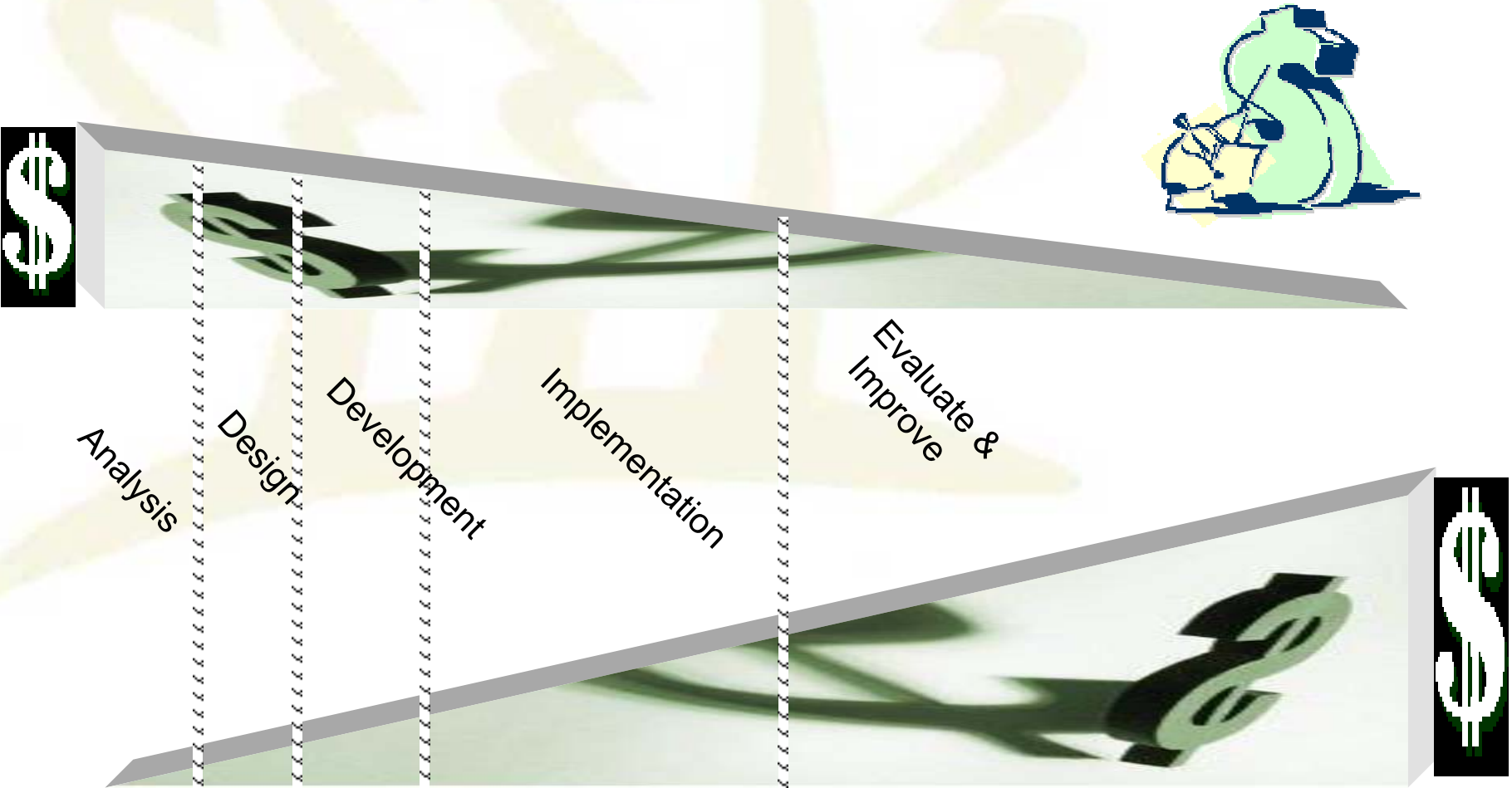




Measuring ROI at time t_1 will not be able to justify HRD investment

Source: Greg Wang, PhD, DPT Consulting Group, Inc. © 2000

Pay me now or pay me later...



Target Audience Does Matter!

FUNCTION	GOAL	MEASUREMENT	SCOPE
Training manager	Close skills gap	Individual performance	Business Unit, specific training
Line manager	Achieve business goal	Project goals, business metrics	Business Unit, specific training
Corporate staff	Choose the best alternative	Financial metrics, business case	Enterprise, e-Learning infrastructure
Enterprise	Transformation, competitive advantage	Business case, shareholder value	Enterprise, e-Learning infrastructure

A FRESH LOOK AT RETURN ON INVESTMENT
A White Paper by Jay Cross, © 2000, SmartForce

Thank you ...

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