



**Sierra-Cedar**

# **Proving the Value of HR Technologies: History, Current Directions**

***Welcoming Academics to Our Conversation***

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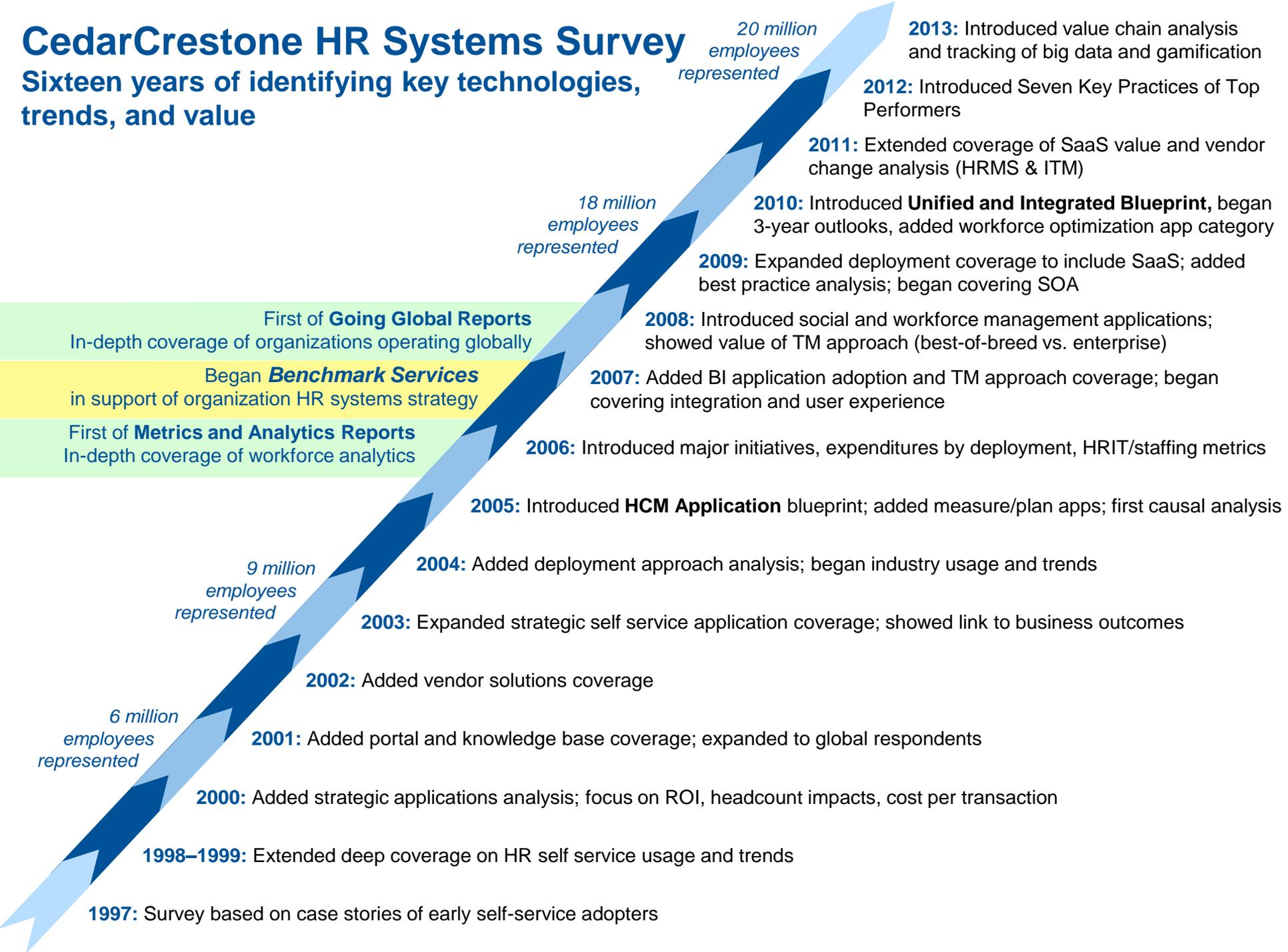
School of Business, University at Albany-SUNY

# 16 Years of the HR Systems Surveys



# CedarCrestone HR Systems Survey

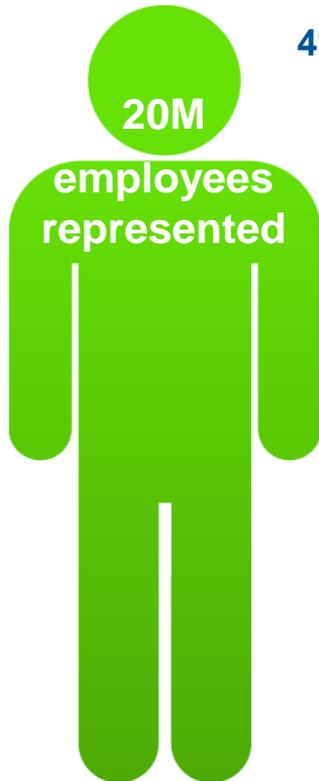
Sixteen years of identifying key technologies, trends, and value



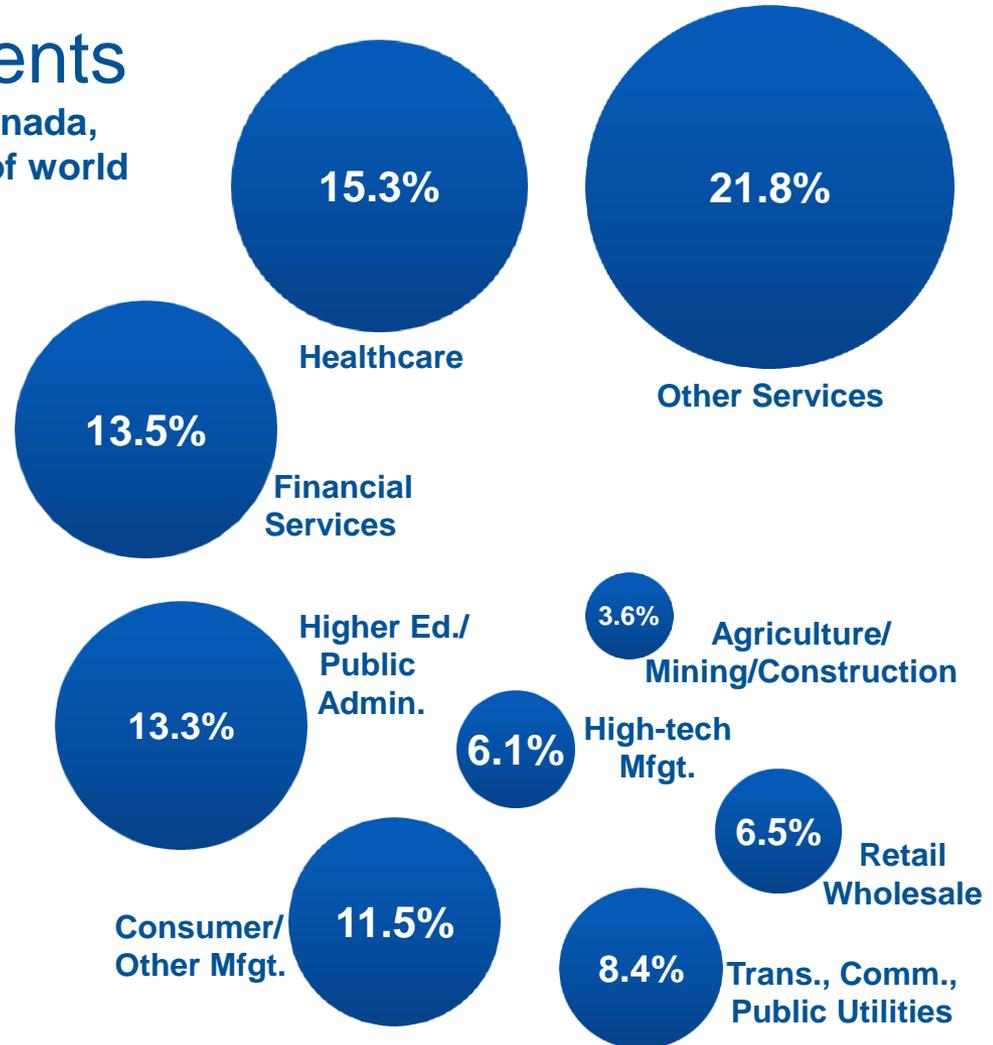
# CedarCrestone 2013–2014 HR Systems Survey Demographics

1,266 respondents

85% US, 6% EMEA, 5% Canada,  
4% Australia/Asia and rest of world



Average number of  
employees = **15,876**



# 16<sup>th</sup> Annual CedarCrestone Survey Key Trends



Software as a Service  
(aka “the Cloud”)

Replacements hit tipping point.

Analytics

Mobile

Social



Adoption continues to increase  
and results in value.

Integration/Unification



The new Holy Grail that few  
reach without a Unified  
solution.

User Satisfaction



Newer products, later releases get  
higher scores. Improvement still  
needed!

# CedarCrestone HCM Application Blueprint

General Ledger, Purchasing, Budgeting, T&E

Vendor Management

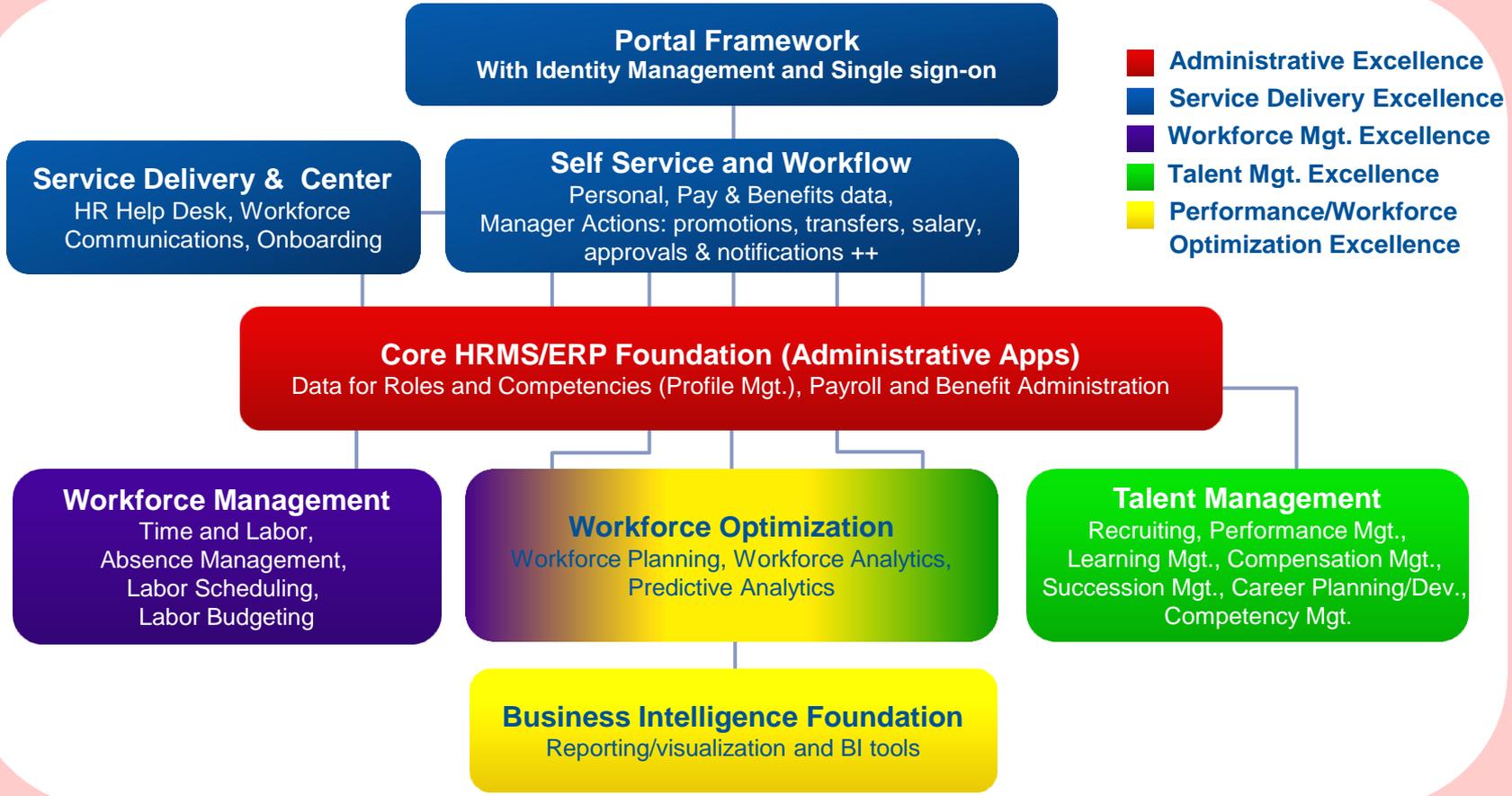
FIN

SCM

Security

Social, Collaboration, and Mobile Capabilities

Workflow



SOA Electronic Content Management

ETL Bus. Process Mgt.

CRM

Projects

Backlog, Pipeline, Customer Satisfaction

Project Costing, Contracts, Grants

# 1997: Example of Savings from Self Service

One large oil company with 9,000 US employees implemented a shared service approach a number of years ago, with a call center for employee services. The manager of HRIS reported that *“technology-based self service is now difficult to justify given the benefits already derived from the Call Center.”* She proposed the following tactics to move towards web self service:

- Implement self service in small increments, each of which provides some value to the employees so they request more applications. Initial applications considered valuable to the employee are annual benefit statements and biweekly electronic paystubs. The annual cost savings estimated from these two applications are:

Eliminate annual benefit statements	\$30,000
Provide annual benefit profile	\$26,000
Eliminate enrollment form	\$18,000
Provide electronic pay stubs	\$34,000
Manpower associated with above processing	\$260,000
TOTAL	\$368,000

- Look for business drivers. The web is seen as an environment that promotes knowledge sharing among geoscientists. *“If we can get them on the web with HR services, we can then move them towards collaboration using the web. We see the need to coordinate our marketing of HR services with business unit initiatives to enhance collaboration.”*

# Alongside the Survey

*Over Ten Years of Measuring ROI and Conducting Post-Implementation Audits*

- Our ROI Research is a three-pronged approach to determine the value proposition for technology solutions:
  - **Return on Investment:** traditional approach aimed at identifying hard dollar cost reductions in labor and materials
  - **Productivity Improvements:** benefits achievable by enhancing individual employee and manager productivity through the introduction of technology
  - **Strategic Opportunities:** new approach that identifies the value of customer and employee satisfaction and converts these soft benefits into realizable hard-dollar opportunities

# Beyond ROI to JOI: Justification of Investment; Turning Soft Benefits into Hard-dollar Savings\*

**Improved Employee Satisfaction** Translates to Reduced Turnover and in Turn Translates to Reduced Acquisition Costs

For every 2% improvement of employee satisfaction, you can expect a 1% reduction in turnover.

Source: Org. Diagnostics

Current employee replacement costs are estimated at \$40,000 per employee

Source: Workplace Resource Learning Center

Therefore, your employee replacement costs could be reduced by:

**\$ 1,400,000**

For an organization with 25,000 employees

**Improved Productivity:** Direct Access to Service Increases Employee and Manager Productivity

By providing employees with direct access to transaction services, their time is freed from administrative tasks.

The saved time can be spent on their core tasks.

For the services you have selected, productivity savings are\*:

Employees:	\$2,575,747
Supervisors:	\$402,834
Managers:	\$86,168

\*Use discount factor to reduce

# ROI Work

## Success Stories – Post Implementation Audits



Leading financial services provider to credit unions and their members worldwide

4,900 employees

PeopleSoft and Authoria implementation, and employee and manager self service

### **PROGRESS TO DATE**

HR/Base Benefits  
Authoria  
eBenefits  
eProfile

**SAVINGS: \$58K**



Diversified financial services; *“Building the best bank in America”*

54,000 employees

Upgrade 7.0 to 8.0, Ben. Admin, employee and manager self service

### **PROGRESS TO DATE**

HR/Base Benefits  
eBenefits  
ePay  
eProfile

**SAVINGS: \$1.6M**



One of the largest investment and insurance companies focused on the *Customer Experience*

26,000 employees

PeopleSoft upgrade, portal, recruitment automation, employee and manager self service

### **PROGRESS TO DATE**

eProfile  
eCompensation Manager Desktop

**SAVINGS: \$556K**

# 2002: Value Achieved After Five Years

Figure 18: Quantitative Results Achieved\*

	North America	Europe	Examples
<b>Average cost of transaction</b>	Average 52% reduction	Average 48% reduction	North America: Savings of \$5.29 per average transaction by having EE complete transaction vs. HR
<b>Cycle Time</b>	Average 62% reduction	Average 40% reduction	Europe: 100% for leave management; North America: average manager transaction from 10 days to 1 day, change of status from 10 days to 3 days, requisition process from 104 days to 63, enrollment from 4 weeks to 1 week
<b>Headcount changes</b>	Average 40% reduction	Average <10% reduction	North America: Data entry staff reduced by 50%; HRIS headcount reduced by 4 people over 3 years, reduction of benefits department by 8 people, service center headcount reduced by 10
<b>Return on investment</b>	Average 40% reduction	No data	
<b>Payback Period</b>	Average 3 years	No data	Most are reporting their forecasts; one global organization we track reports an actual 18 month payback achieved
<b>Employee Satisfaction</b>	Up to 50% improvement	No data	North America: 100% improvement because employees can access while traveling and from home
<b>Inquiries to Service Center</b>	Average >75% reduction	No data	

\*No data points reported from Australia/Asia Pacific respondents

## HR/Staff Ratio

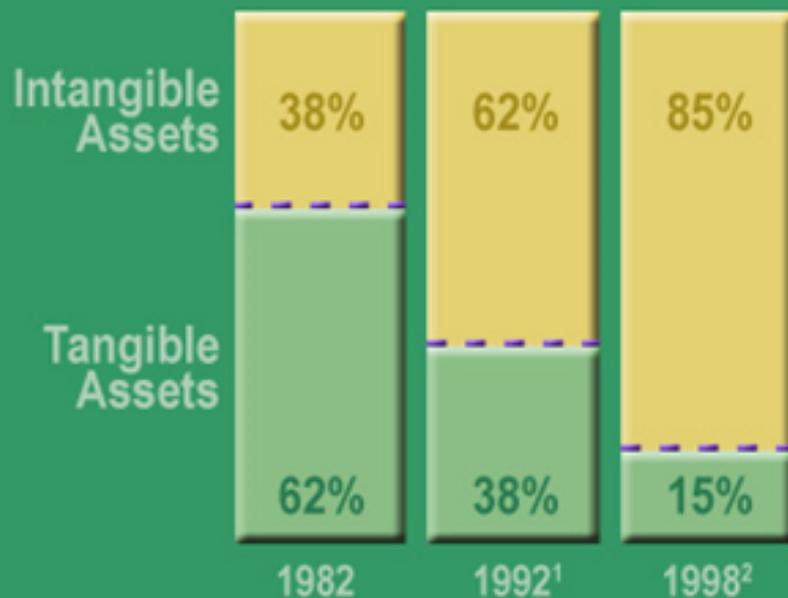
HR Specialist	Web Self Service	Call Center	Web and Call Center	Plus Authoria
1/109	1/140	1/169	1/190	1/212

# Where the “Hard” and “Soft” Savings Come From

- System/server consolidation
  - Standardizing on common, global processes
  - Process-oriented labor savings and materials/distribution savings
- 
- Productivity savings, **which if properly channeled and agreed upon**, yield strategic savings
  - Improved employee services make an organization an “employer of choice”

# Major Shift in the Makeup of Companies

The Source of Value Has Shifted from Tangible to Intangible Assets



1. Brookings Institute
2. Baruch Lev analysis of S&P 500 companies

# Value Analysis is Required to Move to Performance Excellence

- Must define link from individual performance to enterprise objectives
- Must have analytics

## Technology solutions have different value propositions

- Impact on performer's time
- Impact on staff retention
- Indirect value such as customer retention, product innovations, etc.

# Top Performer Methodology and Results

## Top Performers Are Much More Financially Successful Than Their Peers

Four metrics identify Top Performers

	Top Performers	All Others
<p><b>Revenue per Employee.</b> The average Revenue generated by each employee. This metric gives an indication of the productivity of enterprise employees</p> <p><b>Revenue per employee for Top Performers was nearly twice that of all other respondents.</b></p>	<p>\$681,903</p> 	<p>\$352,576</p> 
<p><b>Profit per Employee.</b> The resulting Operating Profit attained by each employee. This figure provides a measure of profitability of enterprise employees.</p> <p><b>Profit per employee of Top Performers was 142% higher than other respondents.</b></p>	<p>\$317,508</p> 	<p>\$131,157</p> 
<p><b>Operating Income Growth.</b> Gross Income subtracting operating expenses before interest payments and taxation expressed as a growth rate over the prior year. It indicates how well organizations are investing in employees</p> <p><b>Top Performers' operating income grew fifty percentage points more than other respondents.</b></p>	<p>61%</p> 	<p>11%</p> 
<p><b>Return on Equity.</b> This shows the profit generated from the total shareholder financial investment in the company. The ratio gives an indication of how viable it is for the company to raise further shareholder funds for continued expansion of the company.</p> <p><b>Top Performers' ROE was more than double other respondents.</b></p>	<p>23%</p> 	<p>10%</p> 

Source: Seven Practices of Top Performers, CedarCrestone

# Applications Linked to Financial Results

- More Applications **Linked** with higher operating income growth

FIGURE 7: Operating Income Growth with and without Key Applications – Worldwide

FIGURE 6: Operating Income Growth by Applications – Worldwide

	Growth
Top quartile (20–26 applications)	18%
3rd quartile (14–19 applications)	15%
2nd quartile (8–13 applications)	3%
Bottom quartile (2–7 applications)	-6%
Overall (2–26 applications)	9%

	Growth with applications	Growth without applications
Manager self service	26%	3%
Career planning	22%	5%
Workforce measurement	17%	7%
Talent acquisition	14%	3%
Performance management	13%	7%

- But are the applications deployed because organizations have money to spend due to their income growth, or do applications cause this growth?
  - While other factors may be at play, a **cross-lag statistical analysis** showed that several applications are clearly among the factors contributing to higher financial performance metrics.
  - In subsequent years, we found that those with highest financial performance actually spend less.

# Technologies Consistently Impacting Business Outcomes

	Pre-2008	2008	2009	2010	2011	2012	2013
Help desk for HR	X	X	X	X	X	X	X
Manager self service	X	X			X	X	X
Business intelligence			X	X	X	X	X
Social (used strategically)			X	X	X	X	X
All workforce management				X	X	X	X

# Value of HR Technologies (2008 to 2014)

## Approaches to Identifying and Proving Value

- Process savings
- Headcount changes
- Metrics (requires benchmarking)
- Best practice outcomes
- Causal links and models

Feature



**Proving the Value of HR  
Technologies**

Source: IHRIM  
Workforce Solutions Review, May, 2014

# Background on Latest Value Analysis: Value Chain Analysis Approach

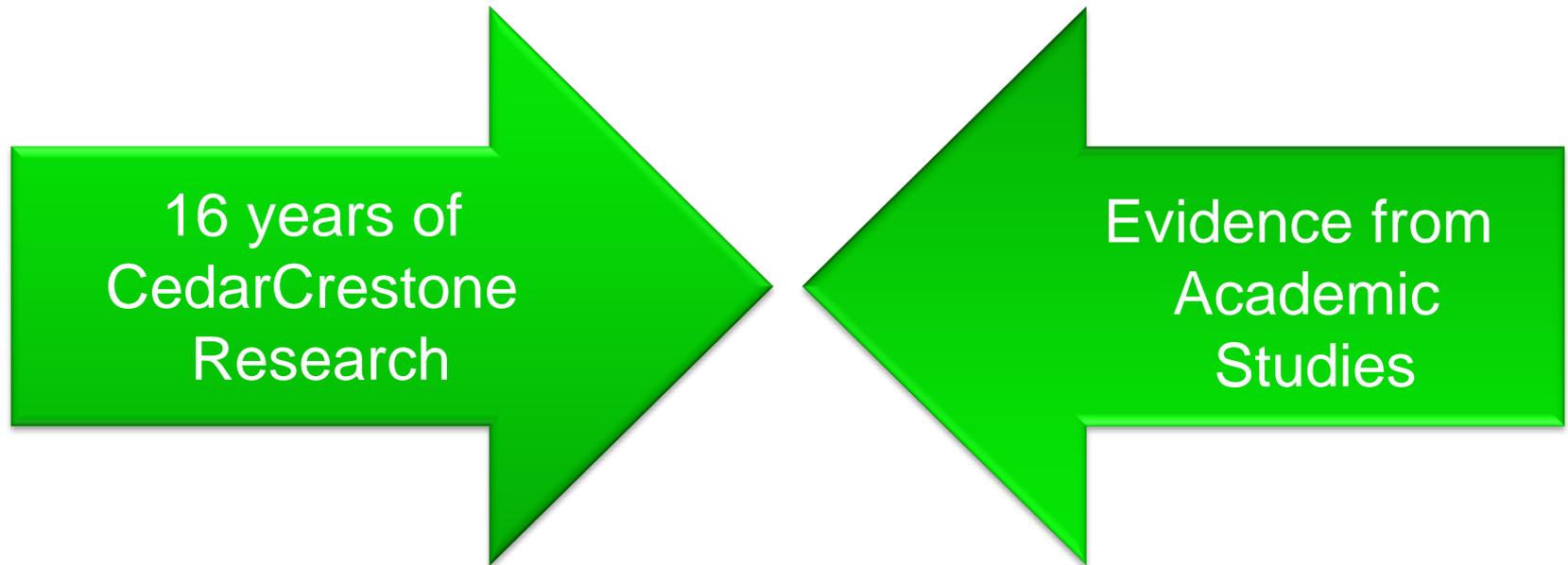
- Over the past year, how have the following changed:

Strongly declined  Declined  Neutral  Improved  Strongly improved  Not applicable/Not sure

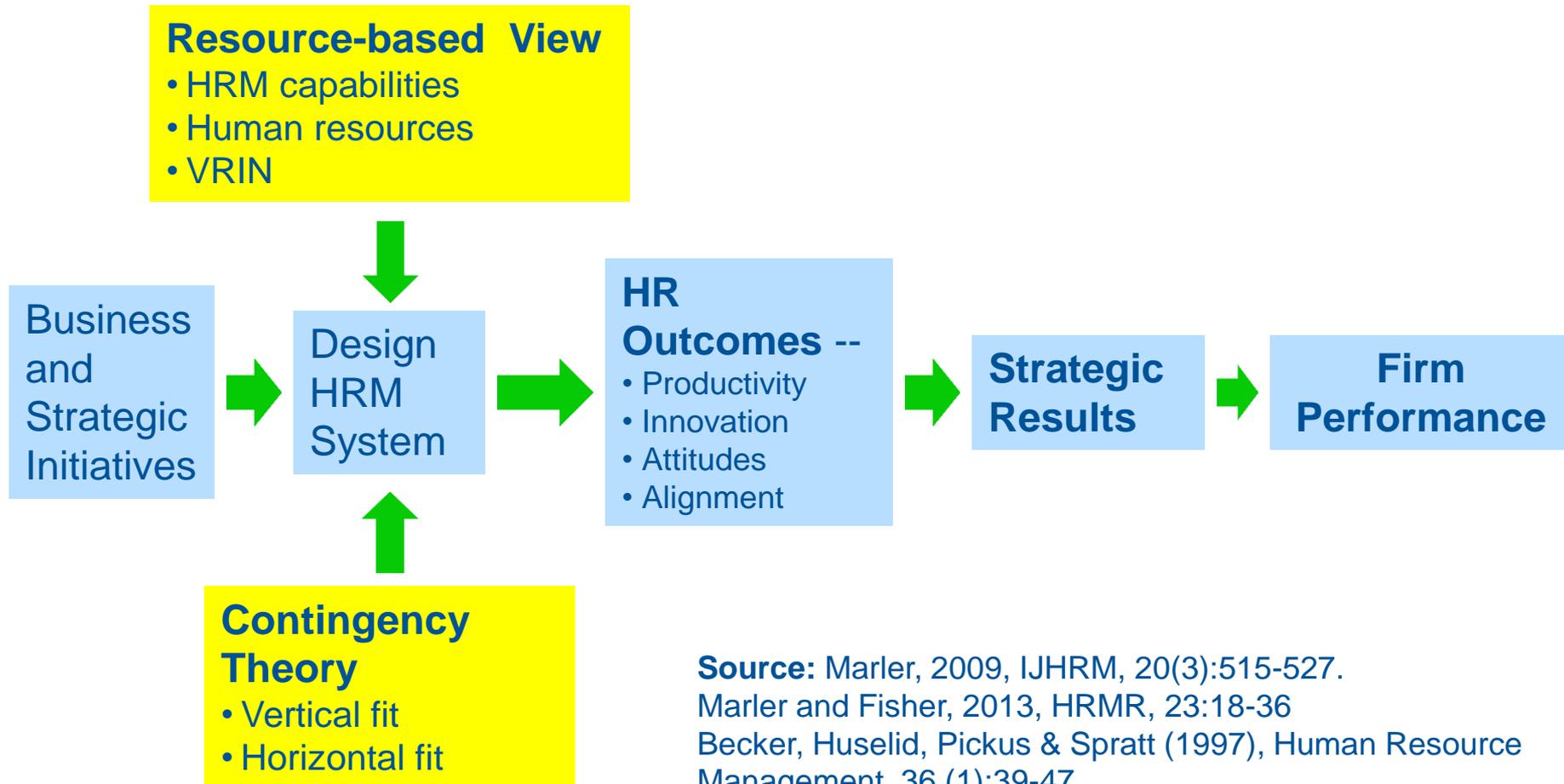
HR Outcomes	
	Employee and manager productivity
	Ability to attract top talent
	Ability to develop a highly qualified workforce
	Availability of workforce data for decision making
	HR cost efficiency (also a desirable business outcome)
	HR alignment with business strategy (also a business outcome)
	Retention of top talent
Business Outcomes	
	Competitive advantage
	Customer (constituent) satisfaction
	Employee engagement (also an HR outcome)
	Innovation
	Market share

# Research Agendas Converge

- Proving the value of HR technology adoption



# An Academic Model Linking HCM to Firm Performance: Based on the Strategic HRM Literature



# Model Linking HR Technology to Strategic HRM, Strategic Business Results and Financial Value



HR Technology application adoption is indirectly related to improved strategic business results (Competitive Advantage and Market Share) through improved HRM outcomes (improved Cost Efficiency, Decision Making, Employee Engagement, Developed Workforce, Talent Retention) and linked to improved financial performance (ROE).

# Three Proposed Specific HR Technology Value Chain Models

- HRM Cost Efficiency
  - Based on process efficiencies resulting in lower costs
- Business Intelligence Human Capital Productivity
  - Based on differentiating process of using information to create value
- Social Engagement and Retention
  - Based on differentiation process of investing in HCM resulting in improved market share

# Empirical Methodology

- CedarCrestone 2013 Survey Data
- Financial ratios from Annual Financial Reports
- Correlation Analyses
- Structural Equation Path Modeling
  - Decomposes correlations into direct and indirect effects
    - Insight into important mediation/intervening factors
    - Helps rule out spurious correlations
  - Simultaneous estimation of multiple relationships
    - More statistically efficient

# Value Chain Measures Used from CedarCrestone Survey

- Over the past year, how have the following changed:

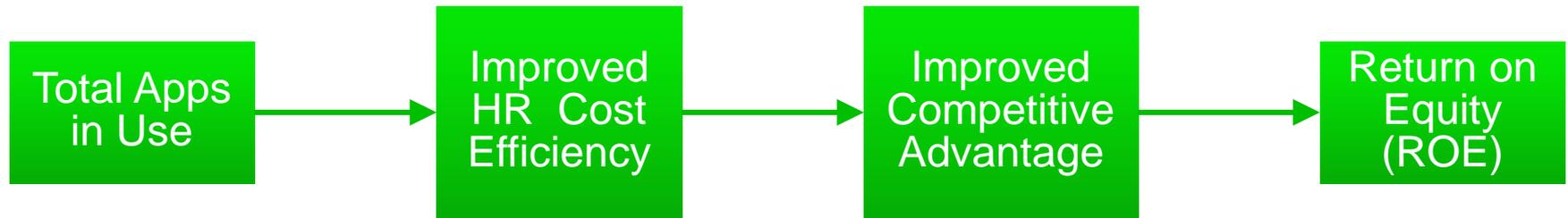
Strongly declined 
  Declined 
  Neutral 
  Improved 
  Strongly improved 
  Not applicable/Not sure

HR Outcomes	
HR Capability	Ability to develop a highly qualified workforce
HR Capability	Availability of workforce data for decision making
HR Resource	Employee and manager productivity
HR Resource	Employee Engagement
HR Capability	HR cost efficiency
HR Resource	Retention of top talent
Strategic Results	
	Competitive advantage
	Market share

# SEM Path Model Assumptions – Caveats

- Significant causal variables are not left out
  - Residuals, which measure error plus the effect of unmeasured variables are assumed to be uncorrelated
  - Unobserved variables should not be prior joint causes of 2 or more observed variables
- No reverse causation
- Low multi-collinearity among variables
- Cross sectional data cannot support causation
  - Temporal precedence can't be established
  - Can establish co-variation
  - Try to establish no plausible alternative explanations (missing common causal variable challenge)

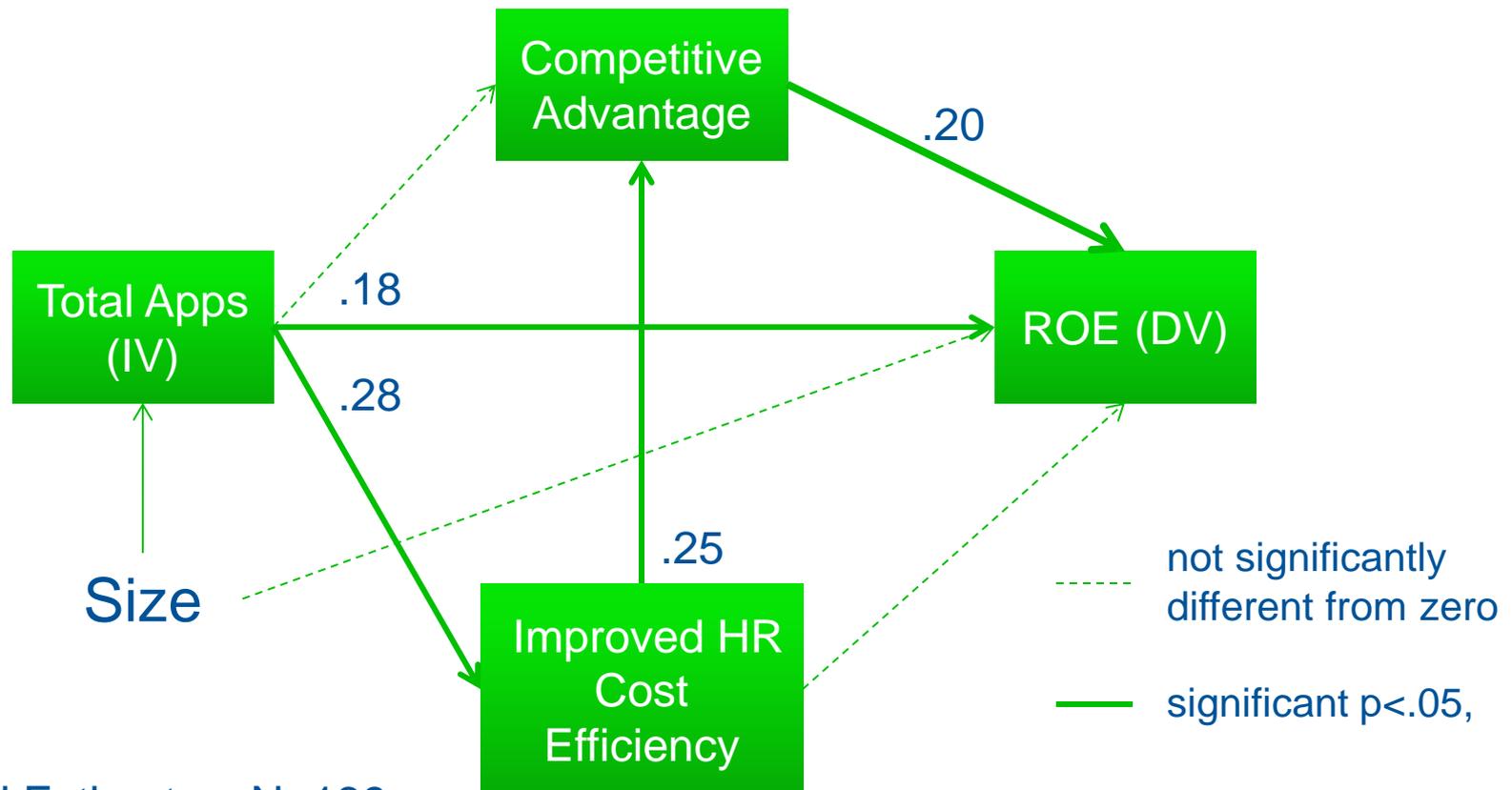
# HRM Cost Efficiency Value Chain



Standardized Estimates; N=139

# SEM Path Cost Efficiency Model Results

The total direct and indirect effects of total apps in use on ROE is .19 ( $p < .05$ ). For a one standard deviation increase in total applications in use (6), ROE increases by .19 standard deviations (.15) or about .03 percentage points (13% v 16%)



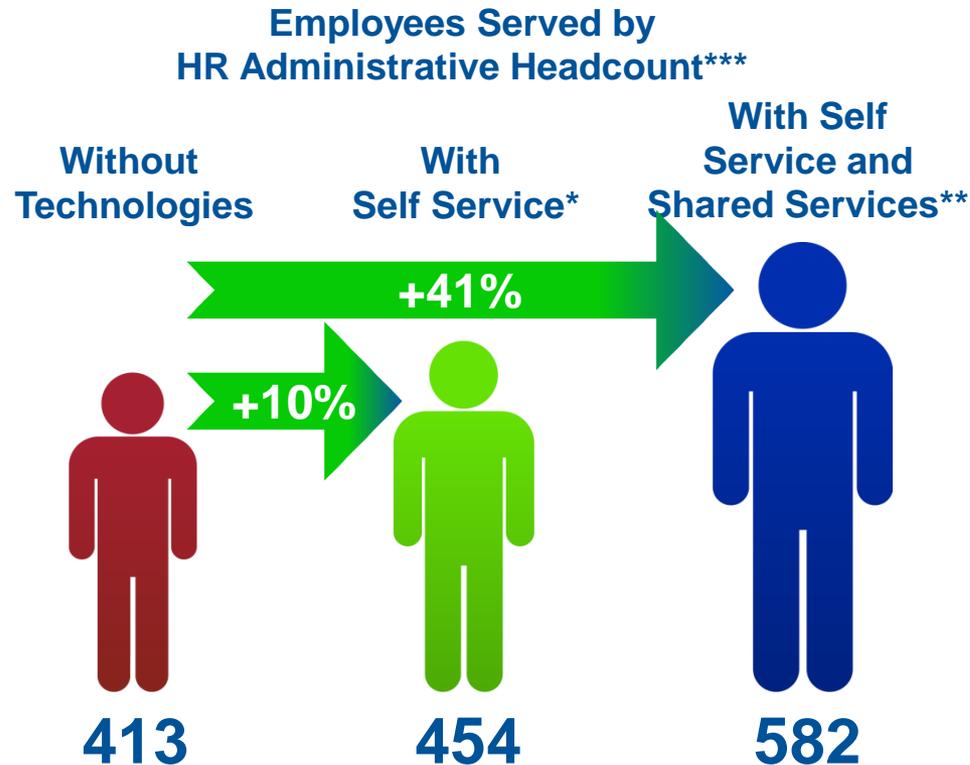
Standardized Estimates; N=139

# Costs and Savings per Process Using Early Enterprise HRMS for the “Future State”

Process	Manual Costs	Self Service Costs	% Savings
Enroll in benefits	\$109.48	\$21.79	80%
Enroll in training	\$17.77	\$4.87	73%
Address change	\$12.86	\$3.39	77%
Apply for a job	\$21.31	\$11.85	33%
Manager – change salary	\$44.67	\$18.26	59%
Manager – set up and approve promotion	\$48.64	\$14.01	71%
Manager – create job requisition	\$36.89	\$11.11	70%

Source: Cedar, CedarCrestone, Sierra-Cedar ROI Studies from 2000 to 2007

# Service Delivery Approach Value: Organizations *with More Technologies\** Serve More Employees



\*With Self Service: Employee and manager self service applications serve 40% or more of employees and 25% or more of manager populations

\*\*With Self Service and Shared Services: Also serving 75% or more of the workforce through a Shared Service Center

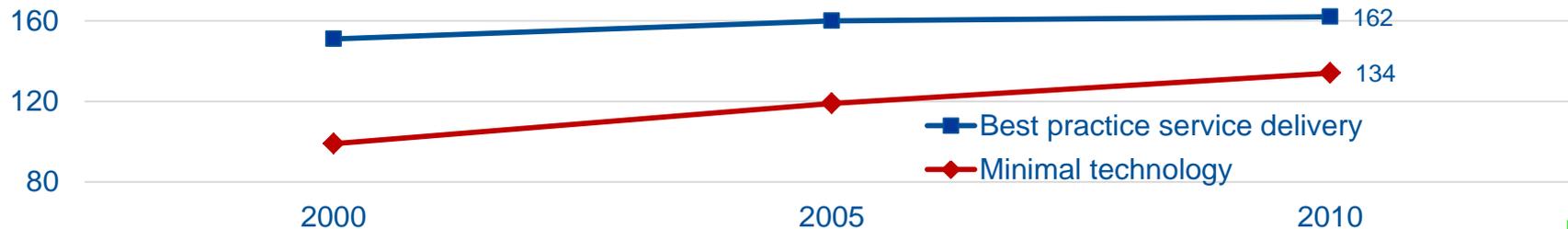
\*\*\*The CedarCrestone survey now calculates the ratio using HR administrative headcount rather than HR administrative FTE as in past years

**SERVICE DELIVERY VALUE:**  
The Shared Services Model—including an HR Help Desk Application  
consistently delivers the highest level of efficiency.

# Key Finding:

Service Delivery Improvements Delivered Cost Reductions and Ushered in More Automation; Focus on TM and BI is Linked to Highest Financial Performance

Service Delivery Technologies 10-Year Impact on Employees Served per HR Staff  
Employees plus contingent workers divided by HR FTE



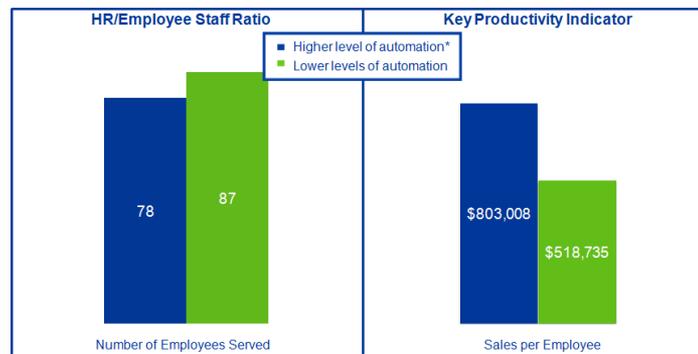
Started organizations on path of automation and adopting best practices



## Talent Management and Business Intelligence Technologies

Focus on talent management and business intelligence along with more HR staff (lower ratio) is linked to improved financial performance

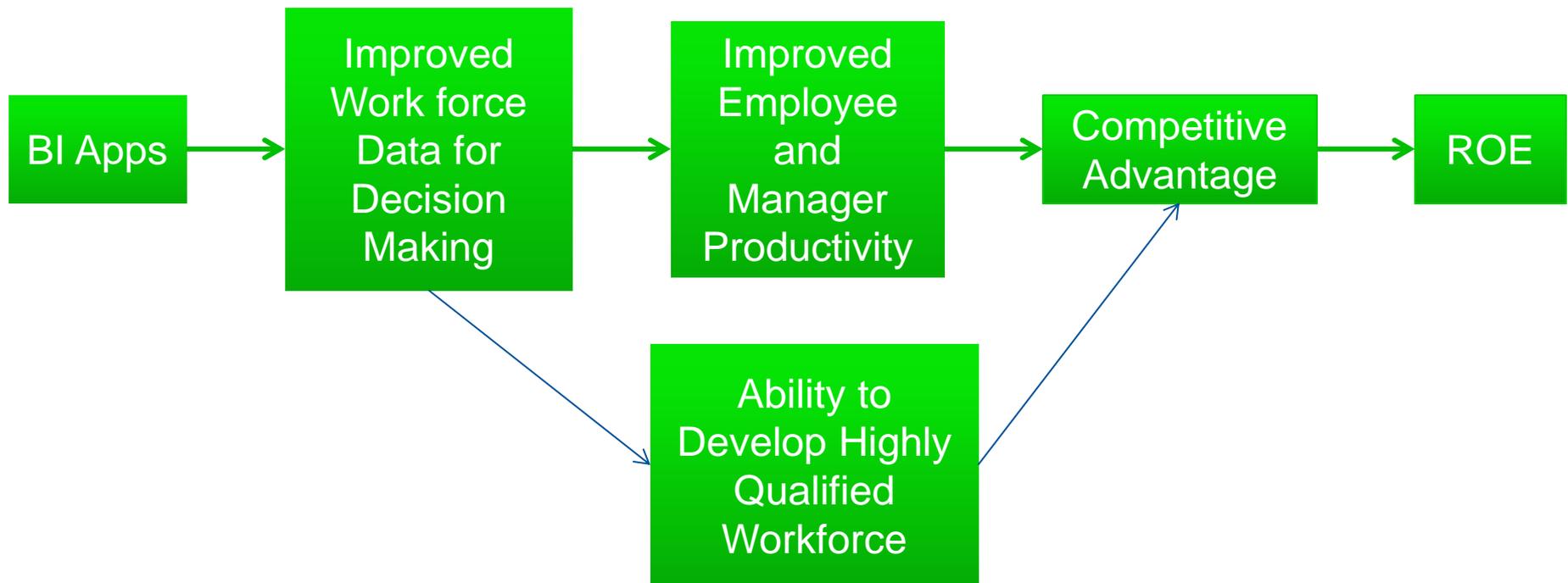
## Financial Services Industry Metrics



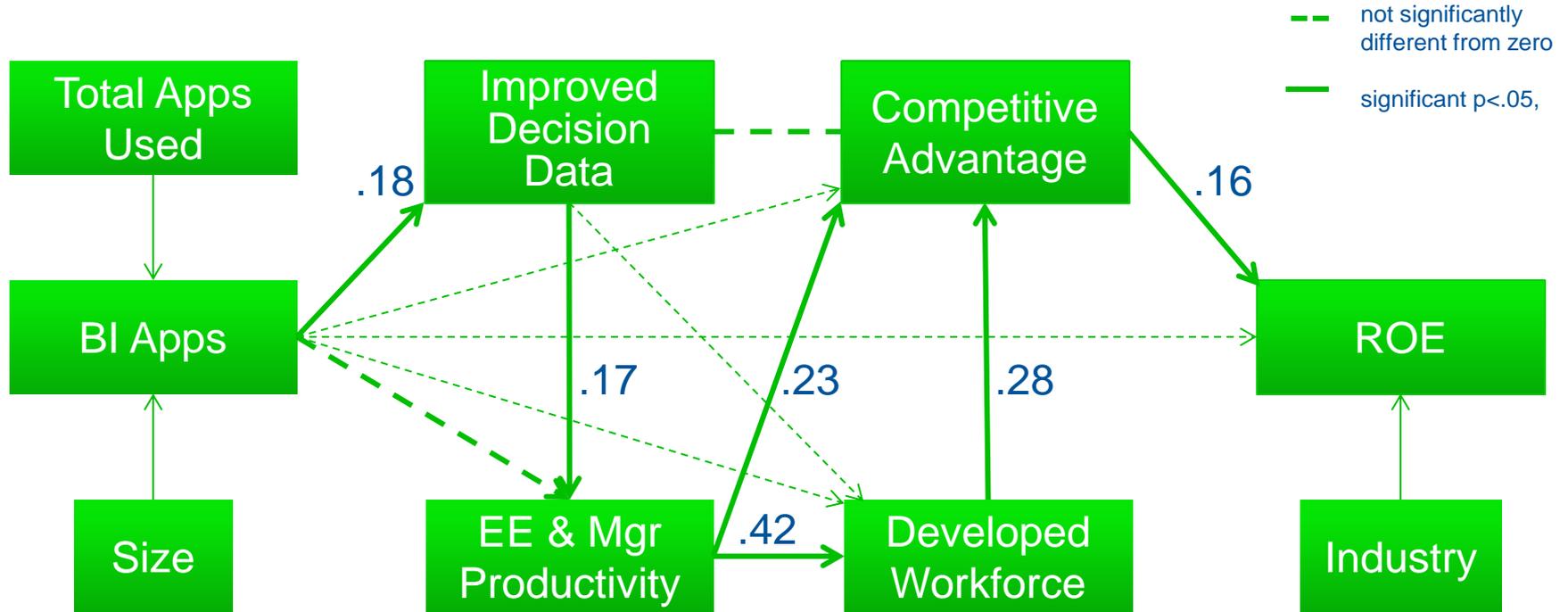
\* Financial Services organizations with greater than 17 applications vs. those with less

# Business Intelligence Human Capital Productivity Value Chain

Higher levels of BI Technology adoption are related to ROE indirectly through improved decision-making data, employee and manager productivity, and workforce development and competitive advantage.

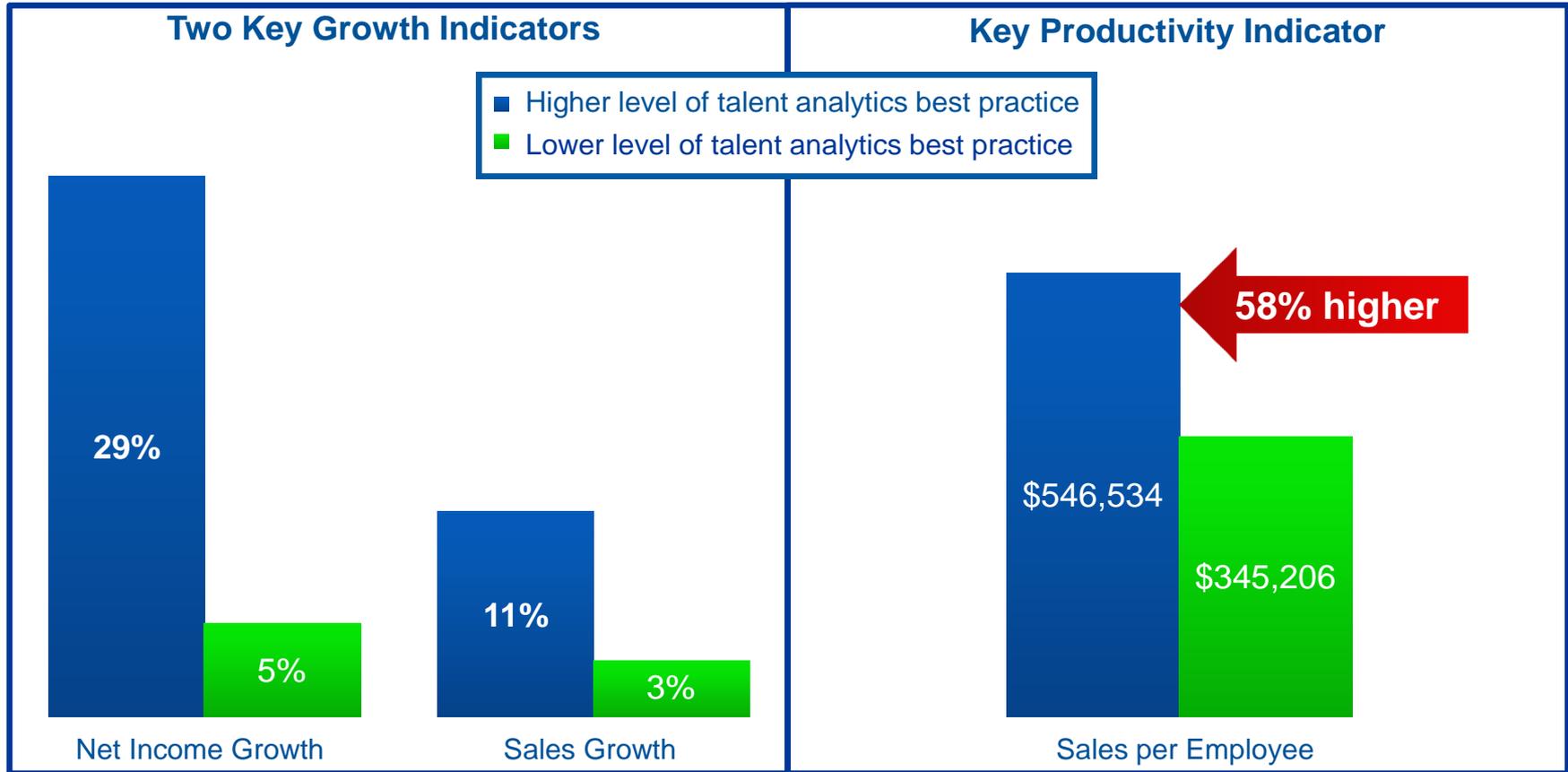


# SEM Path Model Analyses: Business Intelligence Human Capital Productivity



There is significant indirect effect (  $.03 p < .05$  ) and a total effect (  $.18 p < .05$  ) . BI apps are related to ROE indirectly through improved decision-making data, employee and manager productivity, improved workforce development and competitive advantage. One standard deviation higher BI apps ( 5 vs. 3 ) is associated with a .02 percentage points higher ROE ( 13% vs 15% ), controlling for size and industry.

# Key Finding (consistently seen since 2010): Top Level Talent Analytics\* Organizations Outperform!



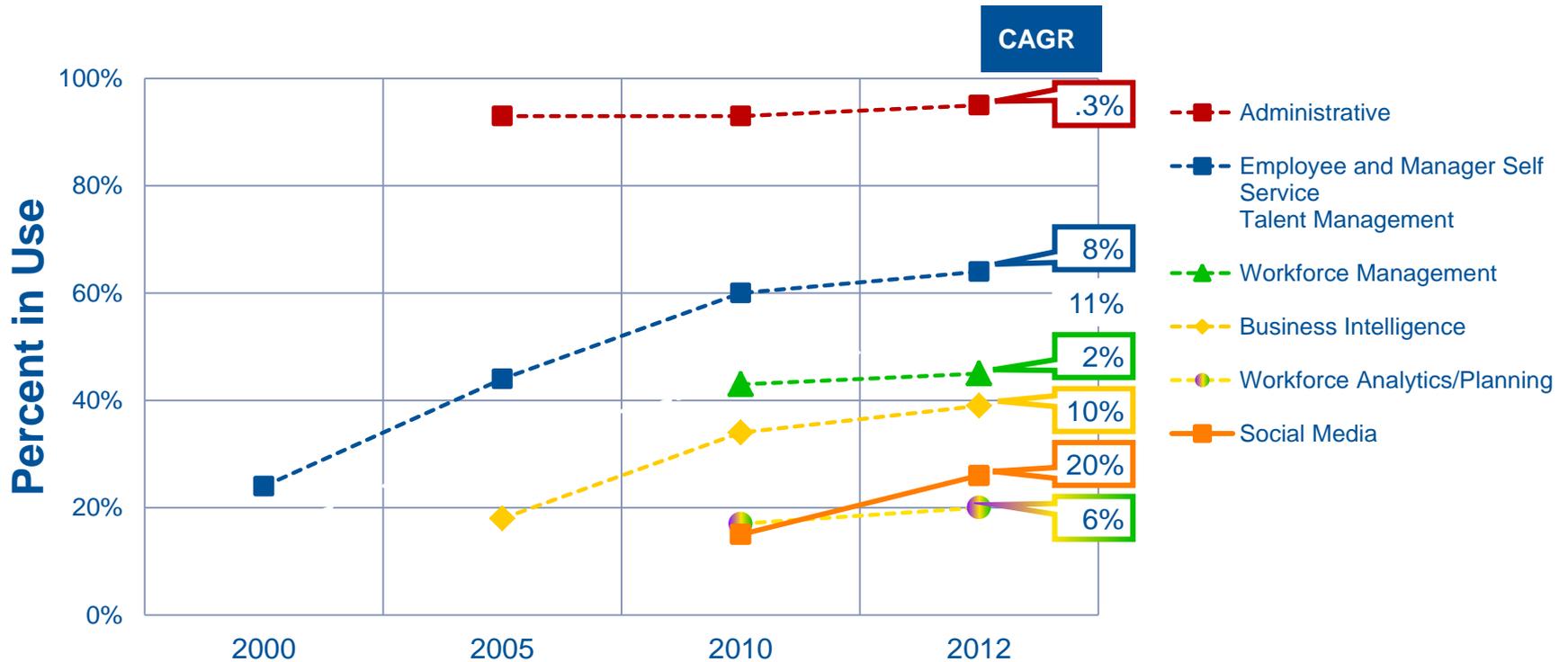
\* Talent Analytics organizations identified by an analysis of level of best practices at all Large respondent organizations  
Source: IHRIM Wire, 9–10: [http://www.ihrim.org/Pubonline/Wire/Sept10/CedarCrestoneforIHRIM\\_Workforce%20Optimization.pdf](http://www.ihrim.org/Pubonline/Wire/Sept10/CedarCrestoneforIHRIM_Workforce%20Optimization.pdf)

# Robust BI Capability in Managers' Hands Delivers Value!

## BI Delivery Approach



# Year 15: Application Adoption



## Adoption varies by application, region, employee size and industry

- Administrative solutions are mature and we're in a new cycle of replacement.
- Amazingly, employee and manager self service overall and worldwide, is just at 64% adoption.
- Social and talent management categories show strongest sustained growth.
- Still a huge addressable market for most HR apps. Remember adoption stage when selling.

# Social Networking Matters

## Early Adopters had 100%+ Higher Sales Growth

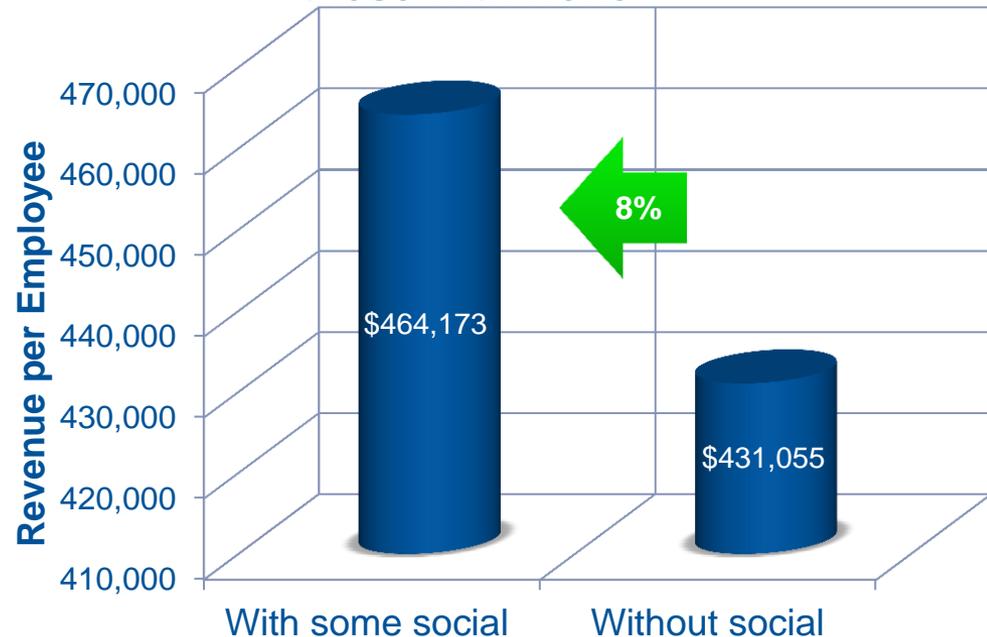


# Value of Social-enabled HR Processes Shows Clear Link to Higher Financial Performance



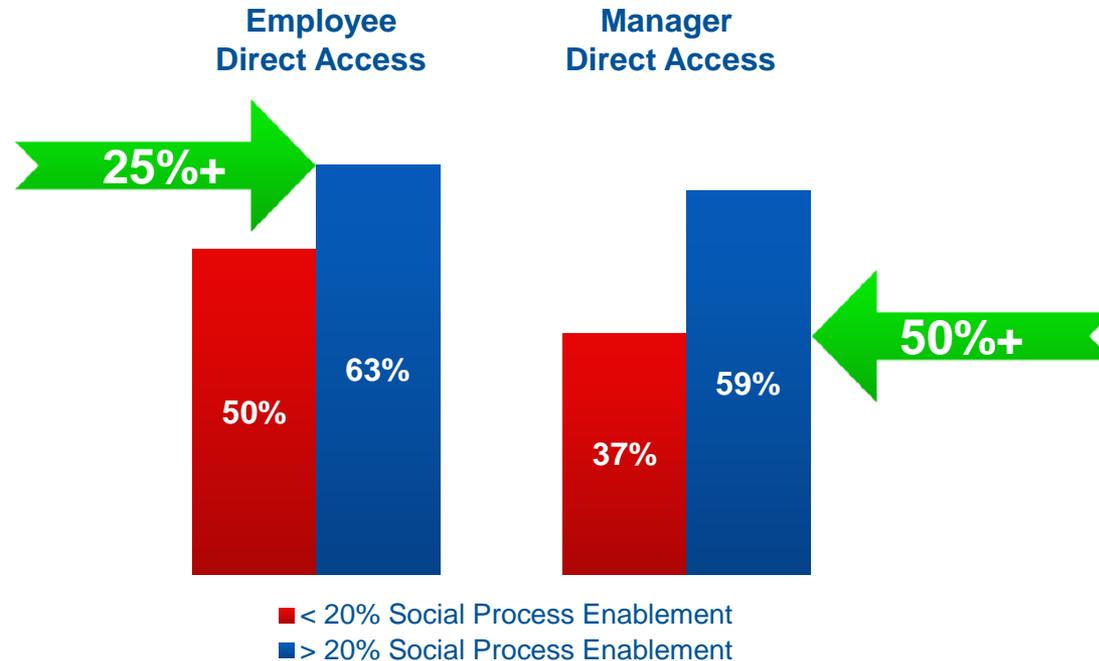
- Organizations with strategic social media usage, with a corporate social network, and with some social enablement have shown consistently higher sales growth and revenue per employee (since 2009)
- We see higher user experience scores and higher overall user adoption.

Organizations with Some Social Enabled HR Processes Outperform those with None



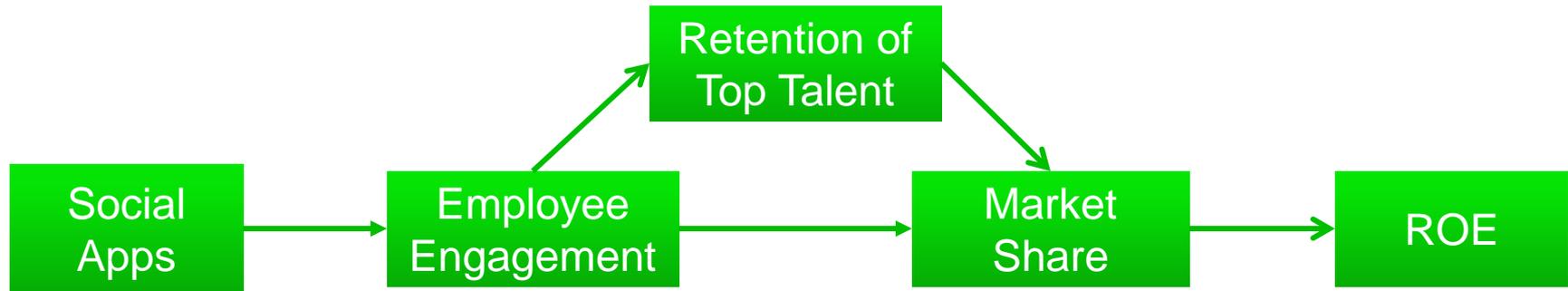
# Adoption of Social Encourages More User Adoption of HR Technologies

## Adoption Impact of Social-enabled Processes



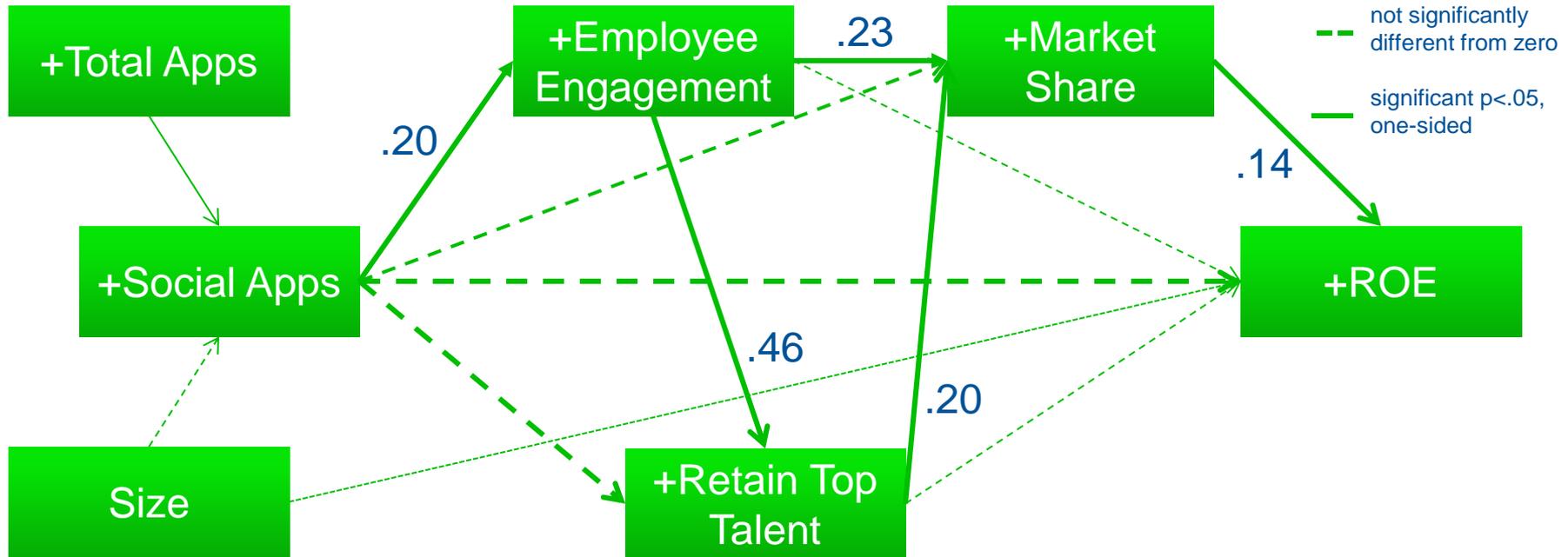
**Higher user adoption essentially means higher user engagement and ideally leads to more value achieved from HR technologies investment.**

# Social Engagement and Retention Value Chain



**Social application adoption has a direct effect on improved Employee Engagement and an indirect effect on ROE through Employee Engagement, Top Talent Retention, and improved Market Share**

# SEM Path Results: Social Engagement and Retention



There is a significant indirect effect (.03 p<.05 one-sided) of number of Social Apps and a total effect .12(p<.10 one-sided). These data suggest that those companies that have one standard deviation above the average # of Social Apps (2 vs. 4) have ROEs .12 standard deviations (.17) or about 2 percentage points (13%vs 15%). This effect operates through improved employee engagement, retention of top talent, and higher improved market share and controls for firm size.

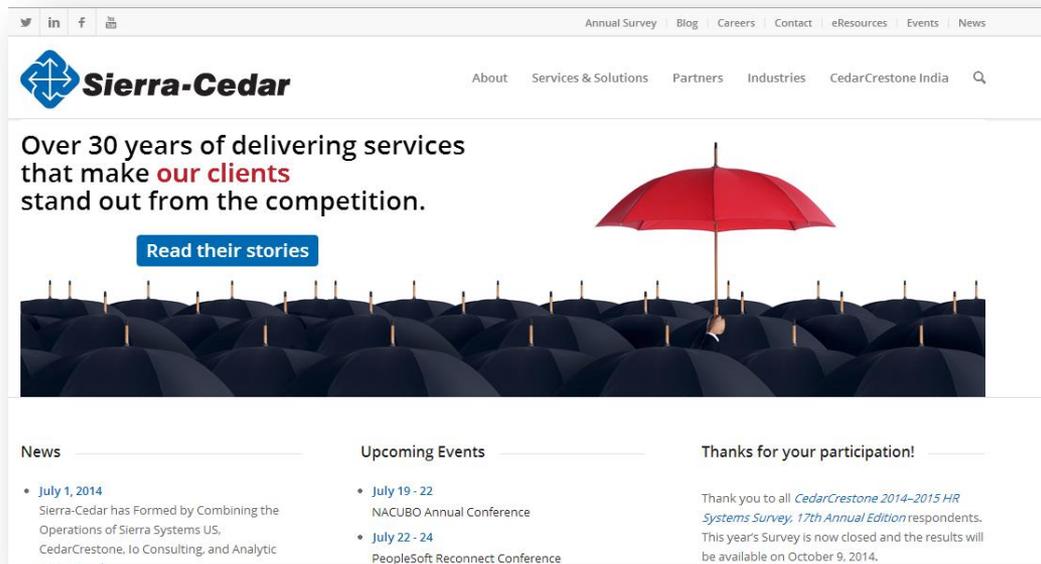
# Lessons Learned from 16<sup>th</sup> Annual Survey

- Get the basics right and keep it simple.
  - Process standardization
  - Integrated solutions
- Continue to invest in more technologies (talent management, business intelligence/analytics, social and mobile)
  - Top Performers actually pay less!
- Make talent management a priority
  - Top Performers improve their ability to attract, develop, and retain the workforce
- Put technology into the hands of your employees and managers – especially business intelligence/analytics
- Change management is a key success factor

# Future Academic Research

- Build the case for the relationship between HCM Technologies and Strategic Value
  - Build on Marler & Fisher, 2013 “Evidence-based review of e-HRM and HRM,” HRMR 23
  - Refine value chains
    - What are the key intervening variables?
  - Improved empirical data
    - Matched/panel longitudinal data
    - Better measurement of variables
    - Single company case studies with longitudinal data
- Identify important “boundary” conditions
  - e.g. Industry, economic conditions, culture, business strategy as moderators

# Where to Go for More Information



[www.albany.edu/business](http://www.albany.edu/business)

[jmarler@albany.edu](mailto:jmarler@albany.edu)

**Invitation to  
Academia**

<http://www.Sierra-Cedar.com/annual-survey>

<http://www.Sierra-Cedar.com/research>

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