


Data Driven Decision Management

Jan M. Haas, Partner
www.cfocolleague.com
jan@cfocolleague.com
267-278-4650

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Data Driven Decision Management

Objectives

- ❑ Understand the principles of Data-Driven Decision Management (D3M)
- ❑ Identify steps for implementation of D3M
- ❑ Select good metrics for higher education (consistent, inexpensive, and easy to collect)
- ❑ Ask the right questions of the data
- ❑ Recognize the errors that subvert data-driven decision making
- ❑ Create leadership team “buy-in”

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Understand the Principles of Data-Driven Decision Management (D3M)

Proverbs 1:5: "Let the wise hear and increase in learning, and the one who understands obtain guidance."

Proverbs 11:14: "Where there is no guidance, a people falls, but in an abundance of counselors there is safety."

Proverbs 18:13: "If one gives an answer before he hears, it is his folly and shame."

Proverbs 19:2 Also it is not good for a person to be without knowledge, and he who makes haste with his feet errs.

Proverbs 21:5 The plans of the diligent lead surely to advantage, but everyone who is hasty comes surely to poverty.

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Principles of D3M

- ❑ An approach valuing decisions based upon verifiable data
- ❑ Reliant upon the quality of the data gathered
- ❑ Subject to effectiveness of analysis and interpretation.

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Principles of D3M

- D3M
 - Collecting appropriate data
 - Analyzing that data in a meaningful fashion
 - Getting the data into the hands of the people who need it
 - Using the data to increase school efficiencies and improve student achievement
 - Communicating data-driven decisions to key stakeholders

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Principles of D3M

- MIT- productivity and profitability
- Better Financial Performance
 - The Evolution of Decision Making: How Leading Organizations Are Adopting a Data-Driven Culture
 - https://hbr.org/resources/pdfs/tools/17568_HBR_SAS%20Report_webview.pdf
- Education
 - students
 - curricula
 - assessment

“If you're not using data to make decisions, you're flying blind.”

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CapinCrouse Data Warehouse 2.0

enter data explore data my account logout

Institution: Clear Creek Baptist Bible College Year: 2019

Board Only Functions See which institutions have provided data.

Select the institution and year for which you want to enter data. Then click on the survey to go directly to that survey.

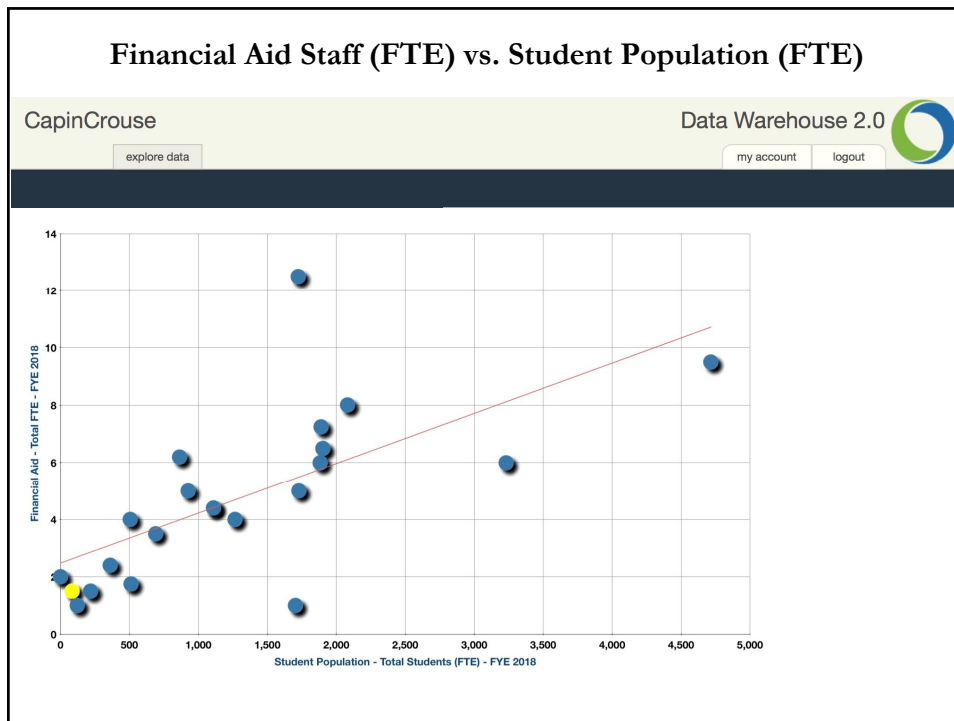
- General Campus Survey
- Annual Compensation Study
- Fund Development Survey
- Annual Endowment Survey
- Physical Plant Survey
- Staffing and Staffing Ratio Survey
- Financial Ratios and Benchmarking Survey
- IPEDS Data

- Not Started
 - In Process
 - Incomplete
 - Complete

Survey sponsors (click on a sponsor to go to their web site):

CAPINCROUSE LLP CORNERSTONE MANAGEMENT

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Data Warehouse

Visit CEATH Company booth

Or contact:



Martin Ramsay
martin@ceath.com

Powered by  CapinCrouse.

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Implementation of D3M

1. Clarify the decision
2. Get wisdom from the Bible
3. Seek godly counsel
4. Pray
5. Consider alternative choices
6. Make a choice
7. Trust the Lord

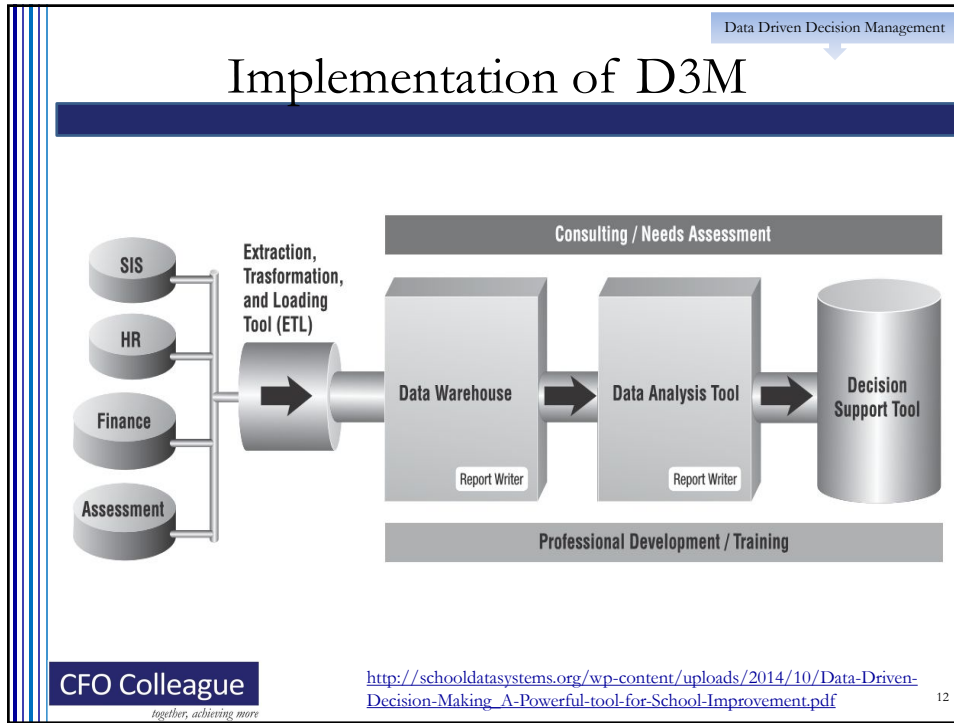
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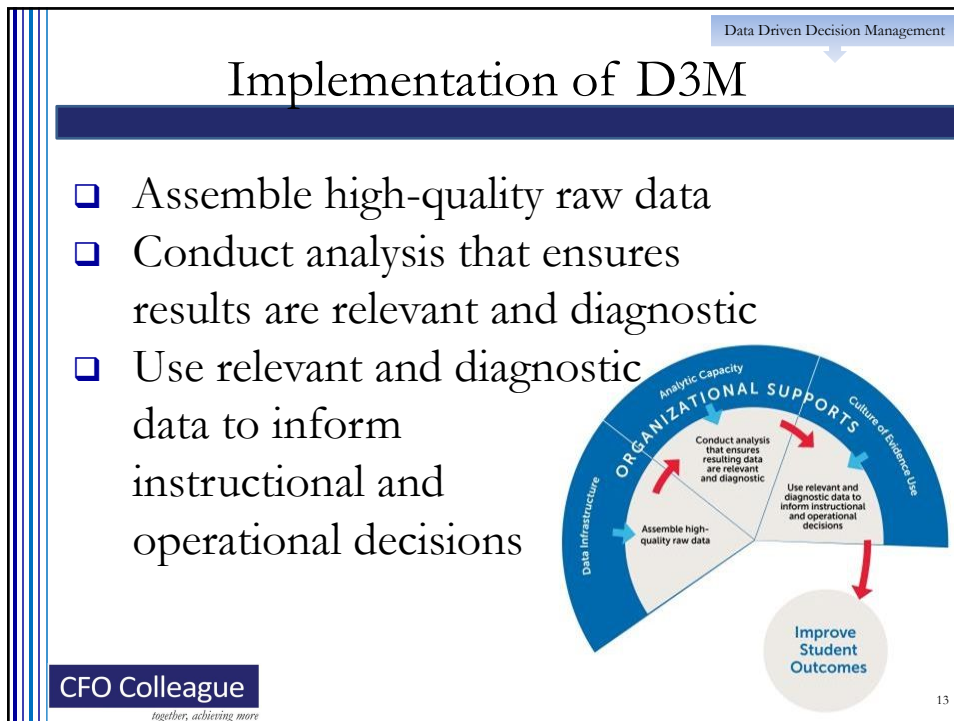
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Implementation of D3M

1. Start with strategy
2. Focus on the business area
3. Identify your unanswered business questions
4. Find the data to answer your questions
5. Identify what data you already have

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Implementation of D3M

6. Work out if the costs and effort are justified
7. Collect the data
8. Analyze the data
9. Present and distribute the insights
10. Incorporate the learning



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Select Good Metrics For Higher Education

“There is a difference between numbers and numbers that matter.”

- Jeff Bladt and Bob Filbin, Harvard Business Review
<https://hbr.org/2013/03/know-the-difference-between-yo>

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Select Good Metrics

- Net Tuition Revenue
 - Benchmark - Annual traditional net tuition per (NTR) student > \$14,000
 - Benchmark - Advancing NTR per student three years forward for first-time freshmen should be greater than current NTR for Seniors (micro price inflation)
- Long-term debt \leq 50% of annual operating revenue

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Select Good Metrics

- ❑ Tuition Discount
 - First time incoming class
 - Benchmark - First-time freshman traditional tuition discount $\leq 50\%$
 - Class by class analysis for improved budgeting and forecasting
 - Tuition resets
- ❑ Cost to Recruit a Student
- ❑ Funnel Ratios

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Select Good Metrics

- ❑ Fall 2018 cost to recruit - \$3,410
- ❑ Cost to recruit increases have far outstripped inflation since study began in 1993
- ❑ Information on average staff sizes by professional, recruitment and support staff
- ❑ In our experience, the issue is often not more budget and staff resources but how they are being used
- ❑ Salary information by position category also available (without revealing individual salaries)

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Select Good Metrics

- ❑ Traditional undergraduate best leading indicators
 - Campus visits
 - Admits
 - Completion rate
 - FAFSA submitted
 - Deposits
 - Registrations

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Select Good Metrics

- ❑ Adult & Graduate best leading indicators
 - Applications
 - Admits
 - Registrations
 - “Next Steps”

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Select Good Metrics

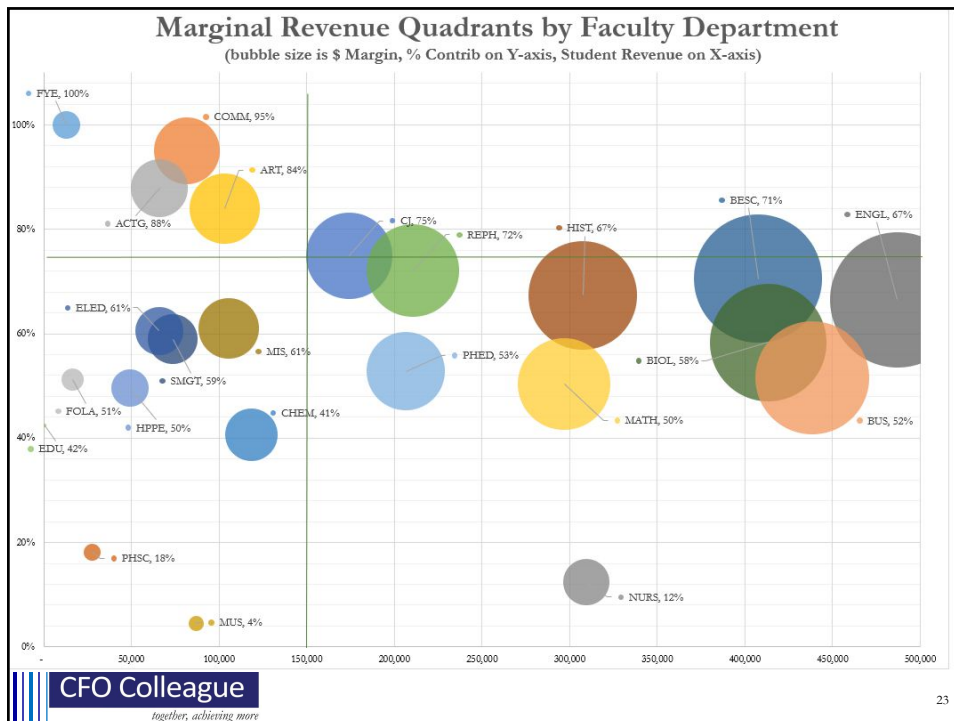
- Marginal Revenue Analysis
 - student NTR less faculty compensation costs
 - marginal contribution
 - ✓ subject
 - ✓ academic level
 - ✓ student class
 - ✓ section code
 - ✓ faculty rank
 - ✓ course level
 - ✓ general education vs. non-general education classes
 - ✓ faculty departments and schools/colleges

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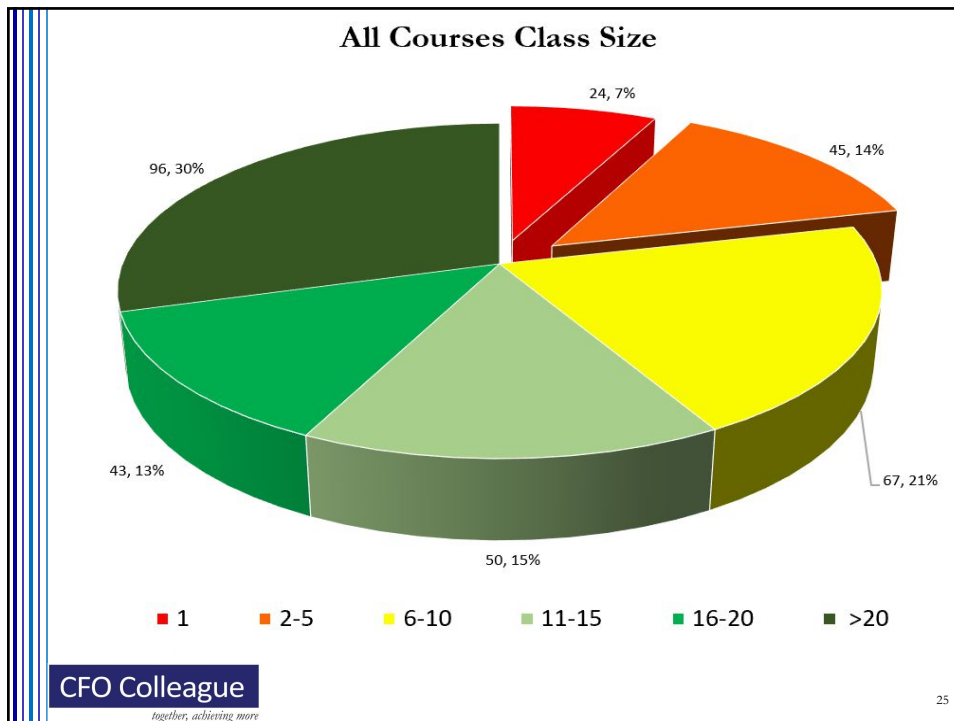
Select Good Metrics

- ❑ Average non-traditional class size ≥ 15 students
- ❑ Traditional student to faculty ratio $\geq 17:1$ with $\leq 15\%$ of traditional classes having 9 or fewer students

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Select Good Metrics

- ❑ Non-traditional NTR > 40% of overall NTR

Revenue:		
Tuition & Fees--Traditional	25,299,836	
Less: Tuition Discounts	(10,400,679)	
Net Tuition & Fees--Traditional	14,899,157	
Tuition & Fees--non traditional	16,908,712	
Less: Tuition Discounts	(313,824)	
Net Tuition & Fees-non traditional	16,594,888	
Net Tuition & Fees	31,494,045	
Non-traditional NTR > 40% of overall NTR	16,594,888	53%
	31,494,045	

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Select Good Metrics

- ❑ Annual overall cost of fundraising < 50% of unrestricted annual fund contributions

Operating (non-student) Revenues		
Annual fund donations	1,700,000	
Development	424,000	
Alumni	125,000	
20% of Marketing	200,000	
	749,000	44%

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Select Good Metrics

- ❑ Cost of external affairs (Advancement, PR, Alumni Relations/Publications, Institutional Marketing) $\leq 2\%$ of operating revenues
- ❑ Auxiliary net contribution covering the costs of student life and athletics while generating a surplus $> 5\%$ of auxiliary revenues

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Select Good Metrics

- ❑ Total salary and benefit costs $< 70\%$ of NTR

Net Tuition Revenue		
Tuition & Fees	20,906,016	
Student Financial Aid	(11,142,278)	
	9,763,738	
Expenses		
Salaries - F/S	7,415,695	
Benefits	1,617,315	
	9,033,010	93%
- ❑ Student receivables $< 2\%$ of annual student revenue at year end

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Select Good Metrics

- Debt service (principal and interest) $\leq 4\%$ of operating revenue
 1. Evaluate your current facilities portfolio. What assets does it include, and how efficiently are they being used?
 2. Conduct an analysis of the investment.
 3. Consider ways to lower or maintain expenses, or to boost revenue, that don't require a capital investment.
 4. Estimate the total lifetime cost to build and operate a proposed new building.
 5. Evaluate the debt already on the books.

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Ask the Right Questions of the Data

Managers have a critical role to play in the beginning and end of the process, framing the question and analyzing the results.

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Ask the Right Questions of the Data

- ❑ Six questions that managers should ask to push back on their analysts' conclusions.
 1. What was the source of your data?
 2. How well do the sample data represent the population?
 3. Does your data distribution include outliers?
 4. What assumptions are behind your analysis?
 5. Why did you decide on that analytical approach?
 6. How likely is it that the independent variables are causing the changes in the dependent variable?

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Recognize the Errors that Subvert D3M

- Get ready to feel threatened
- Your data's cleanliness is next to Godliness

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Recognize the Errors that Subvert D3M

WHEN TO ACT ON A CORRELATION IN YOUR DATA
How confident are you in the relationship? And do the benefits of action outweigh the risks?

CONFIDENCE IN THE RELATIONSHIP

- Frequent correlation; clear causal hypothesis
- Frequent correlation; but many causal hypotheses
- Infrequent, unstable correlation

BENEFITS OF ACTION RELATIVE TO COST OF BEING WRONG

- Risks outweigh benefits
- Benefits outweigh risk

Act

Don't act

SOURCE DAVID RITTER, BCG

HBR.ORG

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Recognize the Errors that Subvert D3M

- ❑ Four common errors
 1. For the Love of Tradition
 2. Iceberg (Data), Right Ahead!
 3. Cooking the Data
 4. A Little Bit Biased

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Recognize the Errors that Subvert D3M

52% of organizations have to break big data into small pieces JUST to work with it.

55% of executives fear that they can't keep up with the complexity of big data.

35% Only 35% of big data analytics users have the ability to share results of their analysis via charts, graphs, etc.

88% Most companies analyze a mere 12% of their data, leaving 88% underneath the waterline. Those companies are working with small data.

SMALL DATA
BIG DATA

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<https://neilpatel.com/blog/kill-data-driven-decisions/> 36

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Create Leadership Team “Buy-In”

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Create Leadership Team “Buy-In”

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Create Leadership Team “Buy-In”

- ❑ Tell A Story
 1. The Anatomy of a Story: 22 Steps to Becoming a Master Storyteller by John Truby
 2. Resonate: Present Visual Stories that Transform Audiences by Nancy Duarte
 3. Long Story Short: The Only Storytelling Guide You’ll Ever Need by Margot Leitman
 4. The Storytelling Method: Steps To Maximize a Simple Story and Make It Powerful, Inspiring, and Unforgettable by Matt Morris
 5. Wired for Story: The Writer’s Guide to Using Brain Science to Hook Readers from the Very First Sentence by Lisa Cron
 6. Story Trumps Structure: How to Write Unforgettable Fiction by Breaking the Rules by Steven James
 7. Made to Stick: Why Some Ideas Survive and Others Die by Chip and Dan Heath
 8. Bird by Bird: Some Instructions on Writing and Life by Anne Lamott
 9. Big Magic: Creative Living Beyond Fear by Elizabeth Gilbert
 10. I like Business Storytelling for Dummies by Karen Dietz and Lori Silverman.

NEW YORK TIMES BESTSELLER
Why Some Ideas Survive and Others Die
MADE to STICK
Chip Heath & Dan Heath
WITH ADDED MATERIAL (now extra sticky!)

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Questions

Jan M. Haas, Partner
www.cfocolleague.com
jan@cfocolleague.com
267-278-4650



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