UPMC LIFE CHANGING MEDICINE

Making the Case for New Technology to Improve the Bottom Line

Joseph P. DiRenzo, MBA

Director, Finance Northern Tier

Dawn A. Vocke, MSN, MBA, RN, CNOR

Clinical Director, Surgical Services

What factors do you consider when making a purchasing decision in your department?
There is an abundance of technology vendors in the market, and those that will be better for patient care and reducing readmissions seem like a no-brainer.

However, do you know all of the real hard costs?
Is there really a market for this use of product, or will the purchase become a storage nightmare that leads to a financial setback?

In this workshop, you will dissect strategies for making a business case for the purchase of new technology, including evaluating the pros and cons, determining whether to rent or purchase, and evaluating loan considerations.

Regardless of the new applications you are considering, this workshop will provide the skills needed to objectively evaluate the profitability of the product or service and create a comprehensive business plan to present to your committee for approval.

Learning Objectives

1. Discuss how to make a case for purchasing or not purchasing a new technology.

2. List the steps to develop a business proposal for the purchase of technology.

3. Identify a tool for your organization to utilize in purchasing decisions.

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About UPMC

- UPMC is a Pittsburgh-based world-renowned health care provider and insurer providing cost effective, patient-centered care. It provides more than $887 million a year in benefits to its communities.
- As Pennsylvania's largest non-governmental employer, with more than 60,000 employees, UPMC is comprised of:
  - More than 20 hospitals
  - More than 500 doctors' offices and outpatient sites
  - An international division
  - An enterprises division

- A recognized innovator in information technology, UPMC was an early adopter of electronic health records and the interoperability solutions that tie them together.
- UPMC has created a genuinely integrated health delivery system. With renowned centers of excellence in transplantation, cancer, neurosurgery, psychiatry, rehabilitation, geriatrics, and women's health, it currently is ranked No. 13 in the nation on the *U.S. News & World Report* Honor Roll of America's Best Hospitals – with 14 adult specialties ranked.

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UPMC's Mission, Vision, and Values

- Our mission is to serve our community by providing outstanding patient care and to shape tomorrow's health system through clinical and technological innovation, research, and education.

- Our vision will lead the transformation of health care.

- Our values:
  - Dignity & Respect
  - Quality & Safety
  - Caring & Listening
  - Responsibility & Integrity
  - Excellence & Innovation

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Common causes for NOT getting your new technology approved by the C-suite:

- Poor project planning
- A weak business case
- Ineffective top management involvement and support

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Can you answer this question quickly?

Do you have evidence to support or refute your assumptions? If not, you as the leader are not ready to present your proposal.

Proposal For New Technology

- Why do you need the technology?
- What is a business case for the technology?
- When do you use a business case strategy?

Why You Need A Business Case

A structured proposal that functions as a decision package for organizational decision-makers

- OR problem or opportunity for increased revenue, patients for your business unit
- benefits
- risks
- costs
- likely technical solutions or alternatives
- timeframe
- impact on operations
- organizational capability to deliver the project outcomes

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4 Step Business Case for your New Technology Proposal

- Executive Summary
- Finance
- Project Definition
- Project Organization

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The Executive Summary

- Depending on the type of technology and involvement of other disciplines, you may want to include a high-level summary of the project.
- The executive summary is the first section of the proposal and the last written.
- It is a short summary of the entire business case. It succinctly conveys vital information about the project and communicates the entire story to the reader.

First impressions are important. Get this right!

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Bad Executive Summary

For consideration:

- The following worksheet demonstrates the upgrade of 4 OR suites and 2 mobile tower sets.
- OR suites 7, 8, 11 and 12 would be chosen for upgrades. This includes all required processors, install, upgrade of Hermes to Sidne, additional work required by Berchtold and cameras. Excluded are any service contracts or scope lens purchases.
- The intent would be to start with these areas with the expectation that the remaining 3 suites and 2 towers could be done at a later date.
- The equipment being upgraded would be retained for parts usage to keep the additional rooms functional since there is no availability of repair parts for the existing systems.
- Additionally, lenses would be replaced incrementally as they are needed.
- Information is included on repair spend FY07 through YTD FY09.

STRYKER ENDOSCOPY PURCHASE PROPOSAL
PHASE 1

4 ROOMS and 2 MOBILE TOWERS
OR ROOMS 7-8-11-12

STRYKER	EQUIPMENT PURCHASE	$660,000.00
	INSTALL & COMMUNICATIONS	$344,700.00
BERCHTOLD	BOOM UPGRADES	$75,000.00
TOTAL		$1,079,700.00

* NO SERVICE CONTRACTS OR SCOPES

PHASE 2

3 ROOMS and 2 TOWERS

STRYKER	EQUIPMENT PURCHASE	$550,000.00
	INSTALL & COMMUNICATIONS	$260,000.00
BERCHTOLD	BOOM UPGRADES	$56,250.00
TOTAL		$866,250.00

SCOPE REPLACEMENTS

AVG COST PER LENS
$3,200.00

STRYKER INITIAL PROPOSAL
REPLACES 68 LENSES @ TOTAL OF $216,500.00

REPAIR SPEND

	FY07	FY08	YTDFY09
STRYKER EQUIPMENT	$37,282.18	$37,149.85	$21,357.92
COUPLERS	$2,311.78	$1,781.80	$437.14
CAMERAS	$20,767.72	$35,621.11	$542.86
TOTALS	$60,361.68	$74,552.76	$22,337.92

Good Executive Summary

Should be concise, but communicates memorable takeaways by including:

1. Purpose & Background
2. Financial Highlights
3. Clinical & Operation Benefits
4. Assumptions

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Good Executive Summary

- **Purpose**: Assess the value of the campus expansion (capacity and infrastructure).
  - 8 additional Operating Rooms, Cancer Center and 72 Medical-Surgical beds (3 Floors)

- **Results:** Capital expenditures including the South Tower have yielded positive NPV over the past 9 years.
  - **1.9% IRR - 3.8% MIRR - 8.7 year payback period**

- **Capacity:** Capacity shortages would have occurred without South Tower expansion (would exceed existing capacity 89% of the time according to FY13 study).

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The Finance Section

- Primarily for those who approve funding. The finance function will be interested in this, plus the first half of the project definition.
- Financial Appraisal.
- When you prepare the financial appraisal, seek advice on content and presentation from the finance department.

Financial Appraisal

The purpose of a financial appraisal is to:

- identify the financial implications for the project.
- allow comparison of technology/project costs against the forecast benefits.
- ensure the project is affordable; ensure every cost associated with the project is considered.
- assess value for money.
- predict cash flow/revenue associated.

Return on Investment (ROI) Examples

- **Growth** – Procedural Laser
- **Quality** – Disinfection Robot
- **Productivity** – Tele-Sitters

ROI Example: Growth – *Procedural Laser*

Assumptions

- Volume: 5 Procedures per week; Basis:
  - Referrals to other clinics/offices
  - Other clinics/offices %'s of these procedures per patient volume
  - Market Assessment (Zip Code Analytic)
- Reimbursement: $300 per procedure:
  - Average payments at other clinics/offices
  - Market rate analysis (would refer to fee schedules if not cosmetic)
- Expenses: $90 per procedure:
  - Review incremental labor, supplies, purchases services, and other (fixed & variable) required to provide services

ROI Example: Growth – *Procedural Laser*

Financial Model		Year 1	Year 2	Year 3	Year 4	Year 5	Total
Volume		260	263	265	268	271	1,326
Total Operating Revenue		$ 78,000	$ 80,356	$ 82,782	$ 85,282	$ 87,858	$ 414,278
Total Expenses		23,400	24,107	24,835	25,585	26,357	124,284
Incremental Cash Flow		54,600	56,249	57,948	59,698	61,501	289,995
Depreciation Expense	109,823	21,965	21,965	21,965	21,965	21,965	109,823
Incremental Operating Margin		32,635	34,284	35,983	37,733	39,536	180,171
Cum Incremental Net Cash Flow	$ (109,823)	$ (55,223)	$ 1,026	$ 58,973	$ 118,671	$ 180,171	$ 470,166
Present Value of Cash Flows		50,556	48,224	46,001	43,880	41,856	230,516

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ROI Example: Growth – *Procedural Laser*

Executive Summary

Background

- Dr. Smith has requested the ABC Procedural Laser in order to provide additional services 1, 2 & 3 to her patients in their community opposed to referring to external offices up to 30 miles away.
- Laser will cost $109K. Illustrated demand and financial assessment support investment.

Key Financial Points *(5 Year Outlook)*

- 1.3 year payback period for Capital Expenditure of $109K
- 22.5% - MIRR
- $124K - NPV of 5 Year Cash Flow

Assumptions

- 5 cases per week (based on referrals, similar offices & market assessment)
- $300 payment per case (market rate)
- Operating expenses are equal to 30% of net revenue *(no additional staff required)*

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ROI Example: Quality – *Disinfection Robot*

Analysis

Cross-functional team is recommended to determine:

- Process implementation factors – EVS, OR, Nursing
- Outcome Factors/Impact – Infectious Diseases, Quality, Care Management, Risk Management
- Economics – Finance and Supply Chain

ROI Example: Quality – *Disinfection Robot*

Analysis

- Cost avoidance of Hospital Acquired Infections (HAI)
  - Need to evaluate your hospitals HAI volume
    - How many are avoidable by area from better cleaning?
  - Need to determine HAI costs at your hospital
    - i.e.: SSI $20K, C.Diff $10K, MRSA $15K, VRE $15K

- Medicare Reimbursement Valuation
  - Value Based Purchasing penalties & bonuses worth 2% (4% impact range)
  - Hospital Acquired Condition 1% penalty for lowest quartile
  - Need to understand what the revenue risk is for your hospital when considering investment in technology to improve quality

- Other Important factors – Patient outcomes/safety experience

- Improvement Opportunity & High Risk Areas > Number of robots desired

- Cost of robots (~$100K) and associated operating costs

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ROI Example: Productivity – *Tele-Sitters*

Assumptions

- Clinical carts with camera and intercom can serve in place of employee sitter for some patient populations
- One staff can monitor up to 10 patients centrally, listen and respond remotely to questions, provide instructions, alert direct care nurse or other staff as needed.
- Volume: Need to determine patients that require sitters and that could effectively be monitored by cart and central staff
- Labor Savings: What are the staff hours that would no longer be needed for 1:1 patient monitoring and the costs of those hours?
  - How many hours would be eliminated for cost savings?
  - How many hours would be re-purposed for other clinical needs/ increased levels of direct patient care?

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ROI Example: Productivity – *Tele-Sitters*

ADC with sitters	8
ADC with sitters *(eligible)*	6

	6 ADC resources	67% Repurposed	33% Cost Savings
FTE	25.2	16.8	8.4
Sal @ $12/ Hr	$ 628,992	$ 421,425	$ 207,567
Sal + Ben (@ 26%)	$ 792,530	$ 530,995	$ 261,535

Financial Model		Year 1	Year 2	Year 3	Year 4	Year 5	Total
ADC		6	6	6	6	6	6
Total Expenses		(261,535)	(266,766)	(272,101)	(277,543)	(283,094)	(1,361,038)
Incremental Cash Flow		261,535	266,766	272,101	277,543	283,094	1,361,038
Depreciation Expense	200,000	40,000	40,000	40,000	40,000	40,000	200,000
Incremental Operating Margin		$ 221,535	$ 226,766	$ 232,101	$ 237,543	$ 243,094	$ 1,161,038
Cumm Incremental Net Cash Flow	$ (200,000)	$ 61,535	$ 328,300	$ 600,401	$ 877,944	$ 1,161,038	$ 2,522,076
Present Value of Cash Flows		$ 242,162	$ 228,708	$ 216,002	$ 204,002	$ 192,669	$ 1,083,544

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ROI Example: Productivity – *Tele-Sitters*

Executive Summary

Background

- Implementation of Tele-Sitting technology will allow for just as effective care as provided today for target population, increased care levels elsewhere and overall cost savings of $261K annually.
- Equipment will cost $200K. Illustrated volume & financial assessment support investment.

Key Financial Points *(5 Year Outlook)*

- < 1 year payback period for Capital Expenditure of $200K
- 43% - MIRR
- $900K - NPV of 5 Year Cash Flow

Assumptions

- Census of 6 of current 8 ADC of requiring sitters will be eligible (75%)
- Average sitter rate of $12/ hour (conservative: based on patient care attendant rate, however sometimes nurses sit at higher rate)
- **Assumes repurposing or reallocation of nearly 17 FTE's to increase service levels!**

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Project Definition

- This is the largest part of the business case and is for the project sponsor, stakeholders, and project team.

- It answers most of the why, what, and how questions about your proposed technology investment.

Includes:

- resources required for its implementation
- project budget
- timeline
- measurable goals for all project milestones
- list any assumptions (i.e. government regulations)
- dependencies (availability of key individuals)

Outline Plan

- The outline plan provides a summary of the main activities and overall timescale — project schedule — for the project.

- Ideally, the project should be divided into stages with key decisions preceding each stage. Use this section to answer the following questions:
  - What is required?
  - How is it done?
  - Who does what?
  - When will things happen?

- This outline plan lists the major deliverables and includes a brief project description plus accountabilities for each activity.

The Market

- A market analysis is a quantitative and qualitative assessment of a market.

- It looks into the size of the market both in volume and in value, the various customer segments and buying patterns, the competition, and the economic environment in terms of barriers to entry and regulation.

Knowing Your Market

- Population – Growths Market vs. Quality Market
- Demographics – Age, Gender, Income
  - Can drive what services are demanded
- Diagnostic relationships
  - Relative services for diagnosis in market
- Competition – Services offered (quality of programs)
- Access – Insurance Networks, Transportation, Education, Referral Patterns

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Market Share

Volume	FY15	FY16	Δ	Δ %
Market	18,900	18,830	-70	-0.4%
Your Hospital	6,800	6,700	-100	-1.5%
Your System	6,000	5,900	-100	-1.7%
Combined	12,800	12,600	-200	-1.6%
Competitor 1	3,000	3,075	75	2.5%
Competitor 2	1,400	1,350	-50	-3.6%
Competitor 3	1,200	1,275	75	6.3%
All Other	500	530	30	6.0%

Market Share

	FY15	FY16	Δ
Your Hospital	113.3%	113.6%	0.2%
Your System	100.0%	100.0%	0.0%
Combined	213.3%	213.6%	0.2%
Competitor 1	50.0%	52.1%	2.1%
Competitor 2	23.3%	22.9%	-0.5%
Competitor 3	20.0%	21.6%	1.6%
All Other	8.3%	9.0%	0.6%

Service Lines [1]	Total Discharges [2] FY15 YTD	FY16 YTD	Chg	% Chg
Vascular Surgery	100	96	-4	-4.0%
CT Surgery	124	135	11	8.9%
Rheumatology	49	53	4	8.2%
Plastic Surgery	18	10	-8	-44.4%
Pediatric	172	147	-25	-14.5%
Medical Oncology	120	156	36	30.0%
Spine	144	135	-9	-6.3%
Neurology	239	203	-36	-15.1%
General Surgery	406	368	-38	-9.4%

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Risk Assessment

- The risk assessment summarizes the significant risks and opportunities and how they are managed.

  The risks included should cover those that could arise from your project or the organization's ability to deliver change.

- **This section answers the following questions:**
  - What risks are involved?
  - What are the consequences of a risk happening?
  - What opportunities may emerge?
  - What plans are in place to deal with the risks?

Purchasing Strategy

- Describes how a project is to be financed and whether a decision to buy, lease or outsource should be taken by the organization before purchasing.

- Moreover, the purchasing strategy should describe the purchasing process used. A formal procurement process may save time, money and reduce project risk.

Most organizations have this section completed by their Supply Chain group.

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Lease vs. Buy

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Questionnaire

Inputs

UPMC Lease versus Buy Decision Template

Entity Name:

Equipment Name:

Inputs

1	Does the requisitioner have capital funds budgeted?	☐ Yes	☐ No	
2	Does end user intend on keeping equipment?	☐ Yes	☐ No	
	Will new products be available before lease term ends?	☐ Yes	☐ No	
3	Does the lease transfer ownership of the property to lessee by the end of the lease term?	☐ Yes	☐ No	
4	Does the lease contain an option to purchase the property at a bargain (less than FMV) price?	☐ Yes	☐ No	
5	Is the equipment in the final 25% of its useful life when leased?	☐ Yes	☐ No	
6	What is the estimated economic life of the leased property?	0		months
7	What is the term of the lease?	0		months
8	What is the Purchase Cost of Equipment?	$		-
9	What are the proposed lease payments per month for:?			
	Equipment	$		-
	Services			-
	Support			-
	Maintenance			-
	Other			-
10	What is the buyout at the end of the lease?	$		-

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Results

Results

UPMC Cost of Funds		
Present Value of Lease Payments		$0.00
Present Value of Buyout @ End of Lease	$	-
Is the lease term equal to or greater than 75% of the economic life?	#DIV/0!	#DIV/0!
Does the PV of minimum lease payments @ beginning of lease term, excluding executor costs ad profits thereon to be paid by the lessor, equal or exceed 90% of the fair value of the property at the inception of the lease, less any investment tax credit retained and expected to be realized by the lessor?	#DIV/0!	#DIV/0!
Does leasing result in lower cost financing than purchase?		NO
Should the lease be treated as an operating lease?		#DIV/0!
How should the equipment be acquired?	PURCHASE	

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Lease vs. Purchase

UPMC Lease versus Buy Decision Template		
Entity Name:		
Cost of Purchase:		
Purchase Price	$ -	
Cost of Lease:		
PV of Lease Payments	$0.00	
Plus: PV of Buyout	$ -	
Net Purchase Cost	$0.00	
Benefit/(Cost) of Leasing	$ -	$ -
There is an economic indifference to leasing		

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Amortization

UPMC Lease versus Buy Decision Template				
Entity Name:				
		Purchase Cost:	-	
		Buyout Value	$ -	
		Rate:	#NUM!	
	Payment	Principal	Interest	Balance

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Lease or Buy

- Lease terms
  - Annual or monthly fee vs. fee per unit of volume
- Cost of Capital
- Capital vs. Operating Budget
- Service contract vs. Internal Maintenance
  - Expertise/Resources
  - Downtime Impact
  - Risk

BUY *(Test Equipment)*

	Year 1	Year 2	Year 3	Year 4	Year 5	5 Year Total
New Vendor Cost (Volume Based)	$ 364,192	$ 364,192	$ 364,192	$ 364,192	$ 364,192	$ 1,820,961
Biorad Lease Buy out Cost	$ 8,000					$ 8,000
New Cost Total	**$ 372,192**	**$ 364,192**	**$ 364,192**	**$ 364,192**	**$ 364,192**	**$ 1,828,961**
Vendor A (Flat $51K/ month Fee)	$ 612,000	$ 612,000	$ 612,000	$ 612,000	$ 612,000	$ 3,060,000
Vendor B (Flat $6K/ month Fee)	$ 72,000	$ 72,000	$ 72,000	$ 72,000	$ 72,000	$ 360,000
Cost Savings Total	**$ 684,000**	**$ 684,000**	**$ 684,000**	**$ 684,000**	**$ 684,000**	**$ 3,420,000**
Operating Cost Savings	**$ 311,808**	**$ 319,808**	**$ 319,808**	**$ 319,808**	**$ 319,808**	**$ 1,591,039**
Capital Investment	**$ 551,546**					

Key Financial Indicators

Investment Outlook	5	Net Present Value of 5 Year Cash Flow	**1,180,458**
Cost of Investment	551,546	Profitability Index * (2)	**3.14**
5 Year Incremental Cash Flow	1,591,039	Modified Internal Rate of Return (3)	**35.77%**
Reinvestment Rate	8.0%	Payback Period	**1.7**

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LEASE *(Scopes)*

What is the estimated economic life of the leased property?	48 months
What is the term of the lease?	48 months
What is the Purchase Cost of Equipment?	$ 2,000,000
What are the proposed lease payments per month for:?	$ 40,000
What is the buyout at the end of the lease?	$ -
Cost of Capital	2.00%
Present Value of Lease Payments	$ 1,843,732
Present Value of Buyout @ End of Lease	$ -
Benefit/(Cost) of Leasing	$ 156,268

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Business Objective

This part describes **WHY** you are doing the project.

The business objective answers the following questions:

- What is your goal?
- What is needed to overcome the problem?
- How will the project support business strategy?

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Benefits and Limitations

Describes the financial and non-financial benefits in turn.

The purpose is to explain why you need a project:

- improve quality
- save costs through efficiencies
- reduce working capital — the difference between current assets and current liabilities
- generate revenue
- remain competitive
- improve customer service or to align to corporate strategy

Business Case Checklist

- Does your problem statement follow naturally from the analysis of the situation?
- Does the problem statement clearly indicate that action should be taken?
- Is your list of potential solutions to the problem adequate? Does it omit any solutions that should be included?
- Is your project description detailed enough?

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- checklist continued

- Is the data and calculations in the budget section correct?
- Do you have enough supporting data in your cost-benefit analysis?
- Have you approached at least one major stakeholder for preliminary support?
- Does your executive summary include all the essential elements and follow the same order as the complete document?

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- checklist continued

- The business case should also include any limitations since these present potential risk to the project.
- Identify the potential solutions to the problem and describe them in enough detail for the reader to understand.
- For instance, if the business case and proposed solution makes use of technology, make sure to explain how the technology is used and define the terms used in a glossary.
- Since most problems have multiple solutions, an option appraisal is often needed. This will explore the potential solutions and recommend the best option.
- When writing an initial business case, the option appraisal is likely to contain a long list of options and will cover many possibilities. As the project description continues a number of options will be rejected.

Please answer the following questions and include supplementary pages as necessary:

1. Technology or Innovative Practice requested:

2. Why the technology or practice is better in patients than what is currently offered?

3. What patient population is affected?

4. What is the current standard of care?

Conflict of Interest Disclosure:

_____
_____
_____
_____
_____

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This page must be completed or request will not be processed. Please be specific and provide as much information as possible.	
Situation	
Background	
Assessment	
Recommendation	
Evaluation Criteria	

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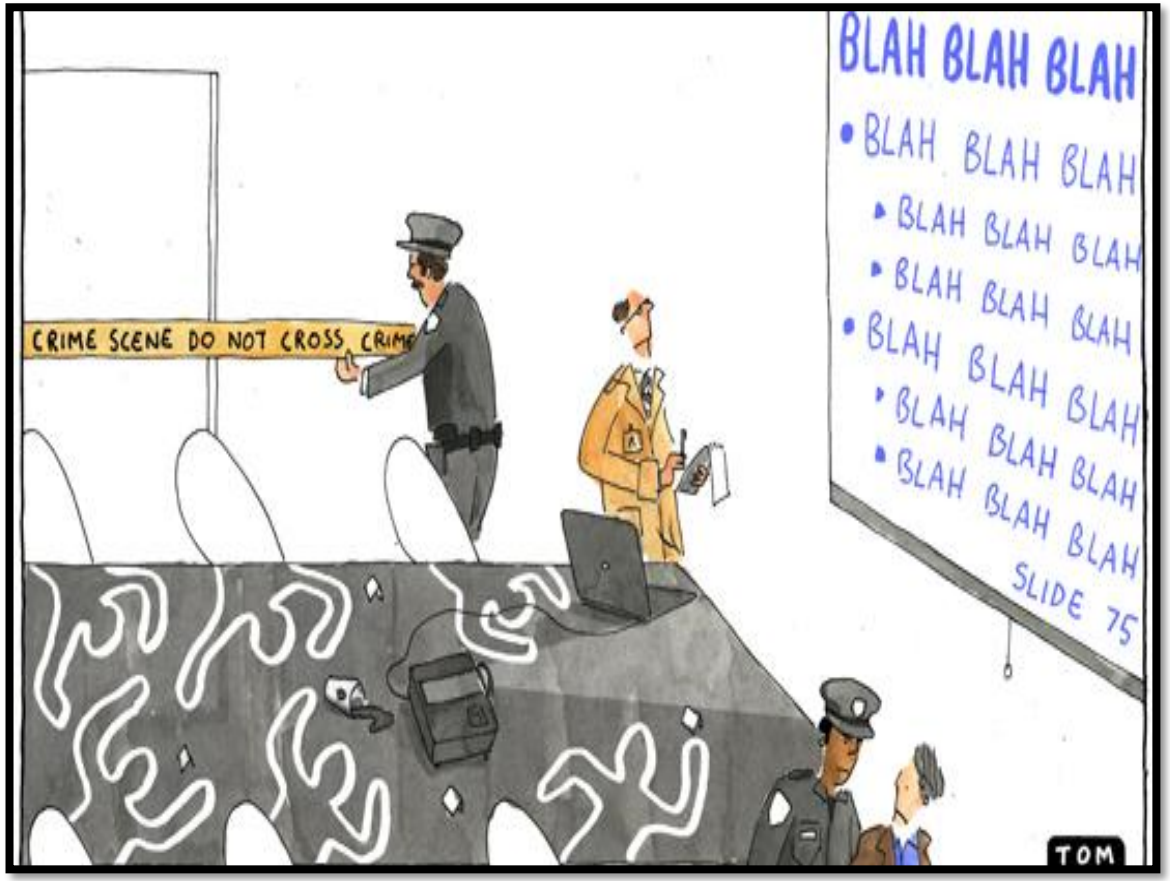

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