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The Modernization Meal

a.k.a. "Burgers, Subs & Pumpkin Pie"

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Why are we here ?.....

- To set the record straight on what modernization really is, or what it should be
- To invalidate false assumptions which have been made for decades
- To challenge age old wisdom, or in some cases lack of wisdom
- To answer the question, “But how will it improve our bottom line ?”
- To NOT get a software sales pitch !!!
- To answer the question “why”, not “how”

RUNDOWN

Y ASK Y

WEBSTER'S

MACHINERY

INVENTORY

WHOPPER

FAT GRAMS

BLOB

WHATEVER

BIG BANG

MORE...



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Why not “how” ?....

- Because those who know “how” will always work for those who know “why”
- Because those who know “how” will always have their budgets controlled by those who know “why”
- Because those who know “how” will always be hired, evaluated and fired by those who know “why”
- In short, because those who know “how” will always be at the mercy of those who know “why”

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One word, many definitions.....

- “Rip it all out and replace it with Java”
- “Rip it all out and replace it with .NET”
- “I don’t care what you do, just get rid of the green screens”
- “If Microsoft says to do it, it must be right”
- If it is a salesman speaking, then it means implementing his or her product
- Notice how these all revolve around technology, ego and emotions, not people and processes

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One word, many definitions....

- Those previous examples also fail to consider whether a modernization strategy makes financial sense, **so we have a better one...**
- “Take stock of your resources. Use them better, use them smarter. Capitalize on your investment in them first, before investing in anything else”
- That’s a little more like it
- **But why do we modernize, anyway ?**

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We modernize to improve the bottom line

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Increase Revenue


Facilitates Both !



Reduce Cost

Improve Throughput **Promote Efficiency**





MODERN ZATION



Enhance ROI **Capitalize on Value**

The green by itself will not buy you a piece of machinery

The absence of green will be your largest impediment to achieving the black or the red



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Take stock of what you have.....

Customers (your single most important asset)

- Want to keep and want to keep happy

People (who know our business)

- Want to keep and want to keep interested, want them to innovate, etc.

Processes (how we do things)

- Want to keep efficient and in compliance

Investments (technology, intellectual property, etc.)

- Want to get more value and ROI from them

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We also have 3 “main courses” ...

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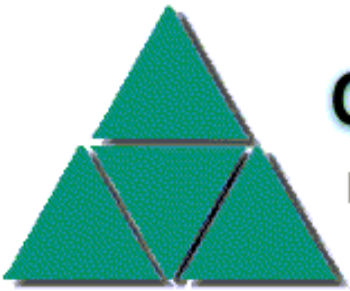
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The Burgers...

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Feature:	Analogous to:
Fat, juicy heart attacks on a bun	Those 25,000 line abominations with 50 files and 500 GOTO's
Served your way, every day	Kowtowing to every user whim
Rare, medium or well done ?	Some things tested thoroughly, others not so thoroughly
Served with super sized fries and a drink	That bulky 3 rd party product you use 10% of at best, and customize mercilessly
A moment on the lips, a lifetime on the hips	One-shot fix programs turned mission critical apps



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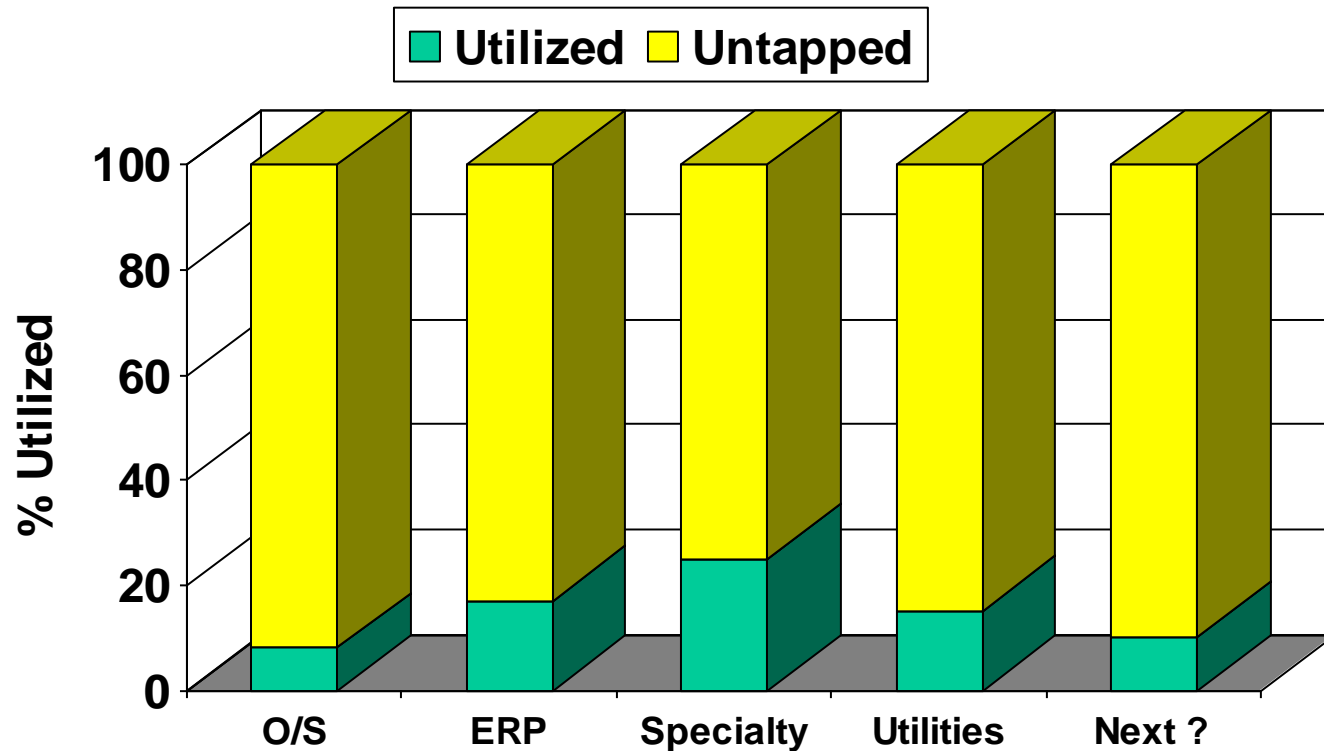


Fat content.....



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- FAT GRAMS**
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- MORE...

Software Utilization (ROI)





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Cost of Untapped.....



- Original price of software
- Cost of training & implementation
- Seat licenses
- Annual maintenance
- Support contracts
- Others
- Analogous to buying a 5,000 sq ft house and living in one small room
- This is ROI ?

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Burger Lovers' Modernization.....



- View “promised land” as a destination
- Design a specification based on what you know right now and need right now
- Take inventory of existing applications
- Take inventory of existing resources
- Calculate project duration (blob of time)
- Calculate a budget (blob of money)
- Execute and hopefully come in on time, on budget and to spec

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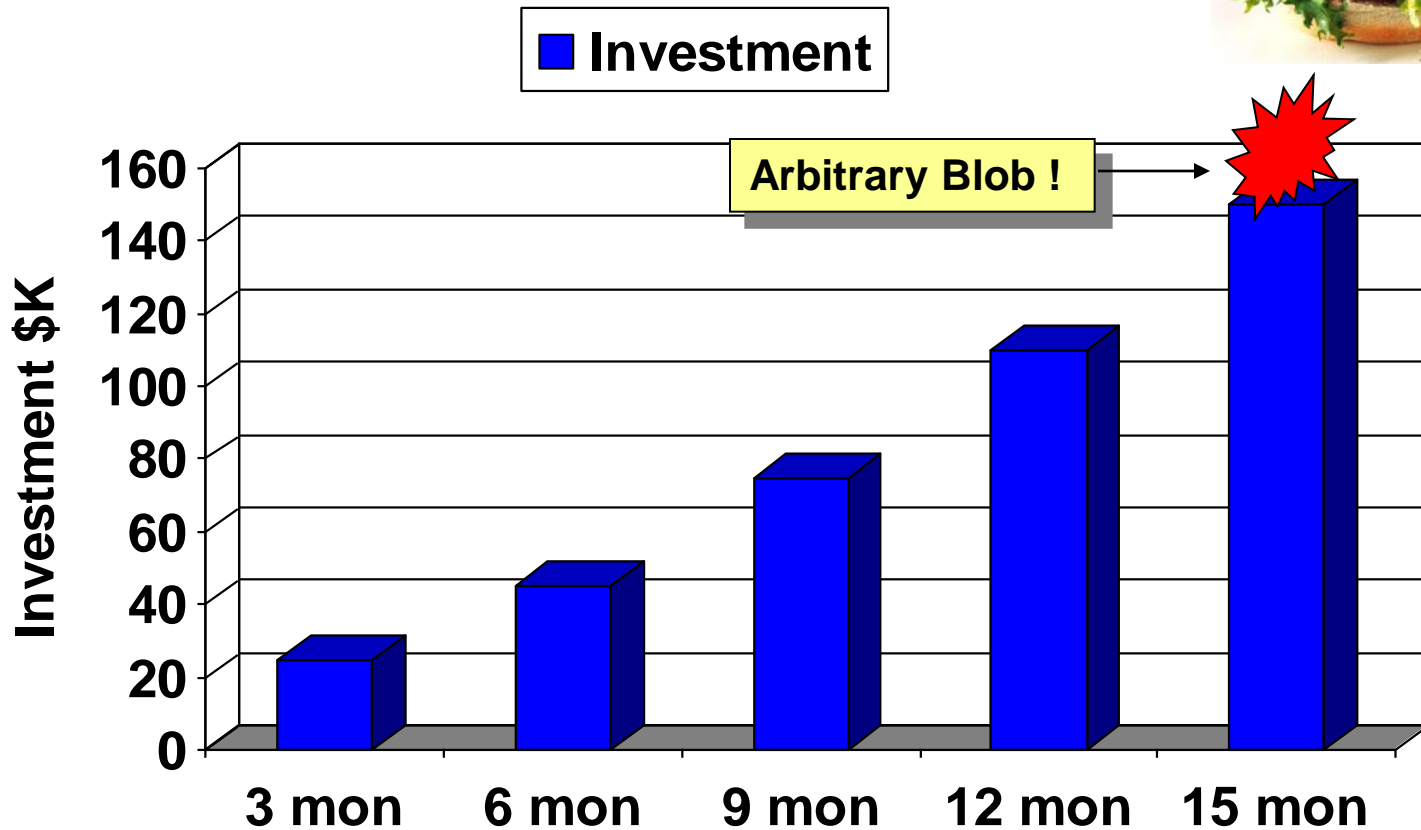
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Burger Lovers' Modernization



PROMISED LAND

Targets of our obsession: Time and Dollars



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Burger Lovers' Modernization.....



Notable quotables:

- “It’s MIS’s problem !”
- “Just make it look like the old system !”
- “What was wrong with the old system ?”
- “Not my budget !”
- “You’re the geeks – you test !”
- “Yeah, whatever !”

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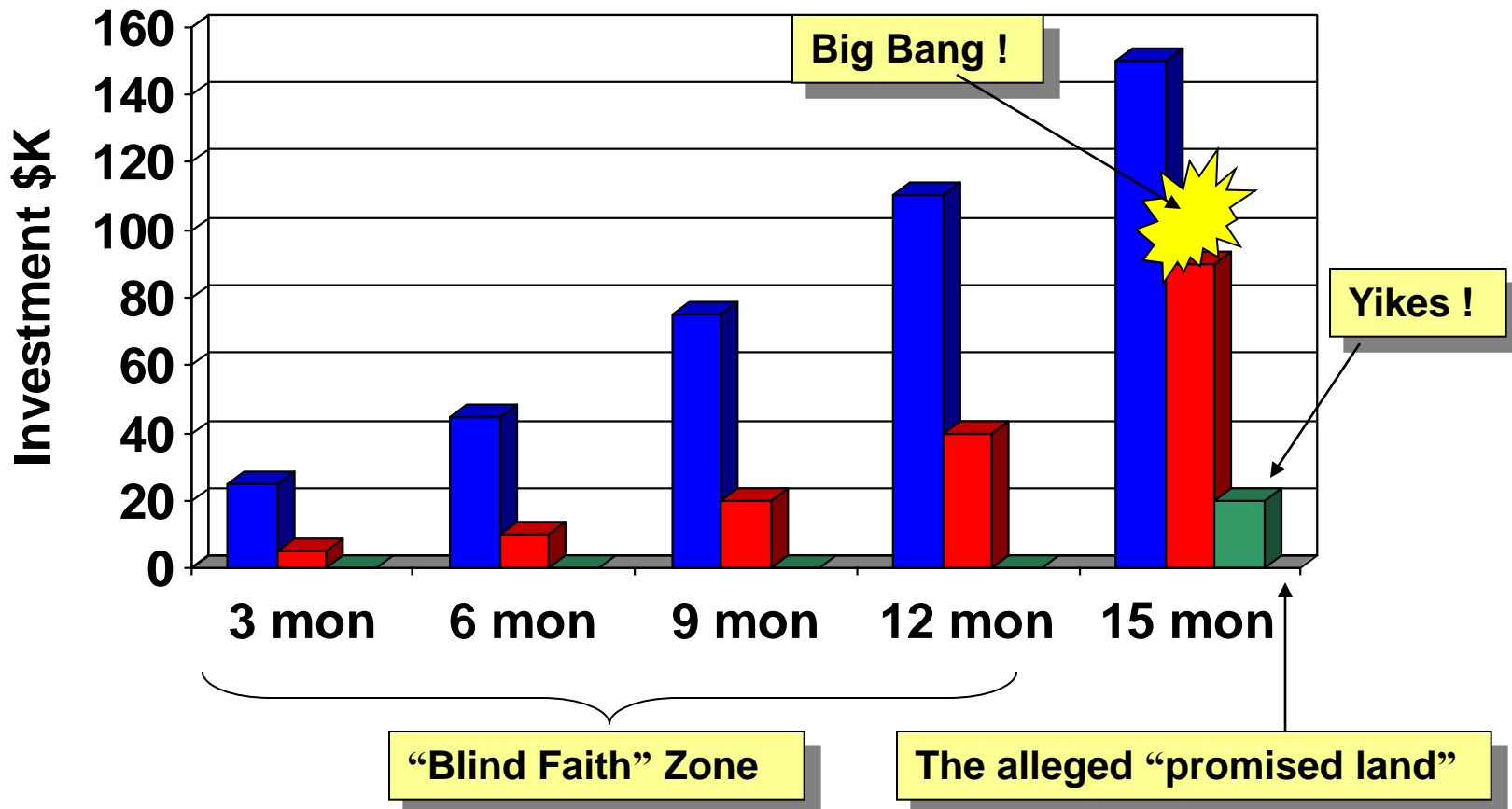


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Burger Lovers' Modernization



■ Investment ■ Disruption ■ Return





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What about all that disruption.....



- Normal day to day improvements put on hold until after project completion
- Specifications get old as the project progresses – climate changes but the spec stays the same
- Users get impatient waiting for improvements and lose enthusiasm
- Management gets impatient waiting for ROI, second guesses investment
- Self appointed CEO's try to derail the project and cost productivity
- **And oh, by the way...**

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Breaking News

Ferengi Raid U.S. Stocks

Mutual Funds also hard hit - 16th Rule of Acquisition blamed



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“A deal is a deal, until a better one comes along”.



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More realistic events.....



- Loss of key personnel
- Organizational shakeup
- Merger/Acquisition (may be good news)
- Significant financial downturn
- Natural disaster (ex. Katrina)
- Civil disaster (ex. 9/11)
- Change of heart on strategic vision

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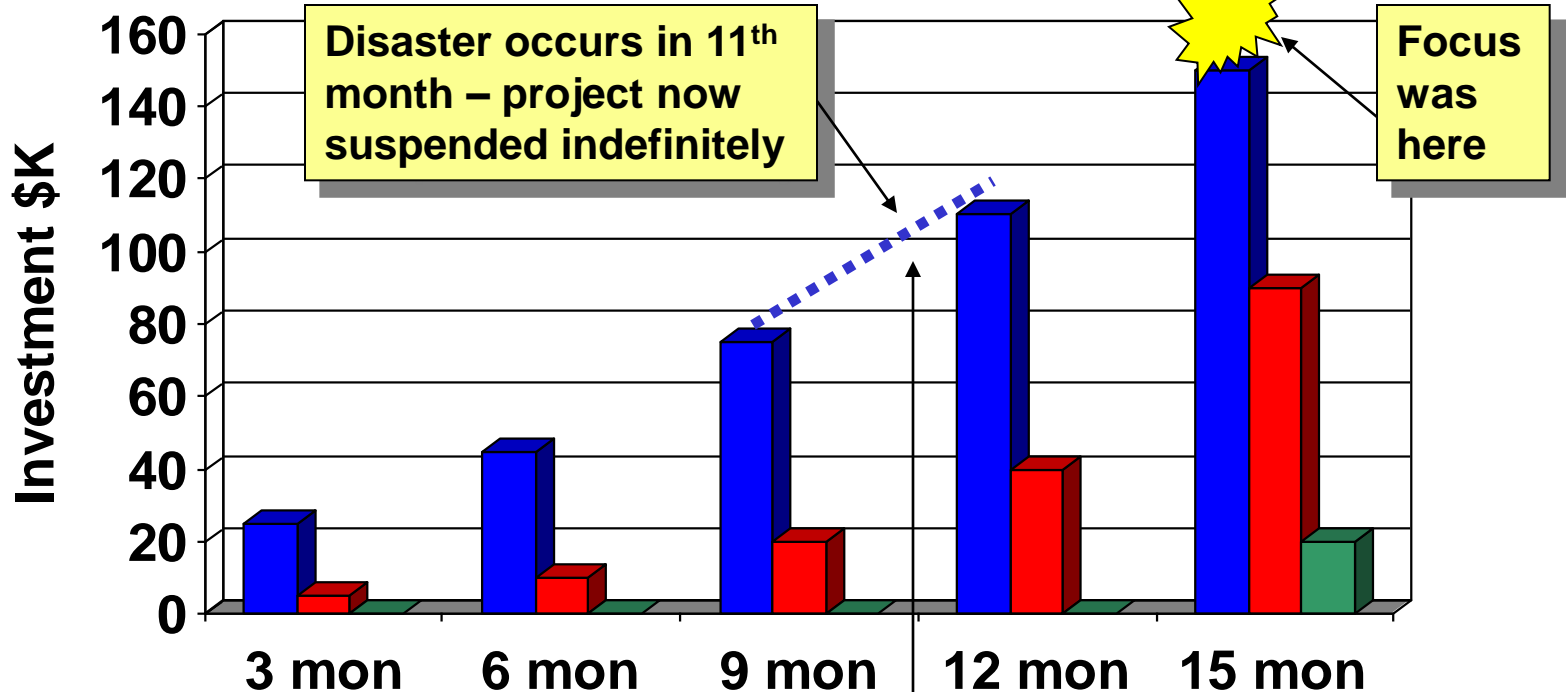


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Disaster occurs in 11th month – project now suspended indefinitely

Focus was here

\$100k invested, and NOTHING to show for it !



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All this dead money....



- Can't be liquidated
- Can't be used to help alleviate the effects of the disaster
- Has earned us NOTHING in return !
- Some might even have to be re-spent IF and when the project restarts

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Even if the project IS completed.....



There will undoubtedly be disruption:

- “That doesn’t look like our old system”
- “That might be what I asked for, but it’s not what I wanted”
- “Where’s my version of the program ?”
- “Let’s go back to the old system !”
- Users spend more time complaining about the new system than learning it
- “I don’t care if I approved it – it doesn’t work !”
- And it’s all MIS’s problem – FTFT !
- **And that’s not all...**

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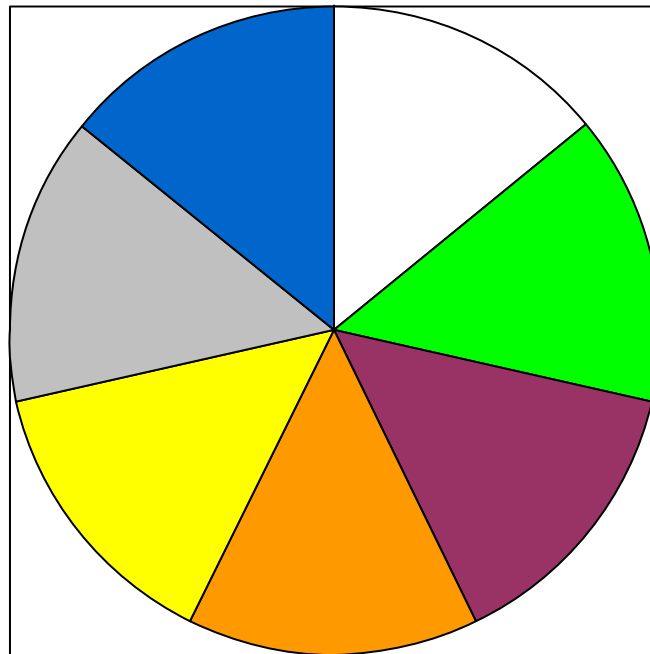


...It could fail !



Why Modernization Projects Fail

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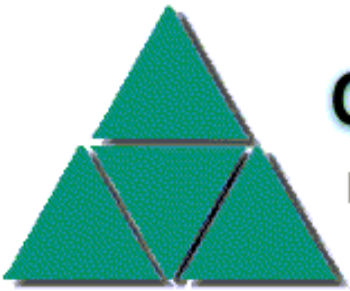


- Successful
- Time
- Budget
- Spec
- Return
- Satisfaction
- Disruption

Experts usually focus on these reasons

But these hurt just as much

A more effective approach would minimize these risks



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The Subs...



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Feature:	Analogous to:
Lean, healthy and low in fat	Business logic developed once into easily reusable objects
Served on fresh baked rolls	Latest available technology used to best advantage
Goes down smooth, easy to digest	Steady, staged modernization with little or no disruption
Made from the same ingredients at each location	Using software the way it was designed
Served with baked chips and diet soft drink	Efficient but effective components interfacing well



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Sub Lovers' Modernization.....



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- View “promised land” as a journey, not a destination
- Identity a FEW key benefits based on what you know right now and need right now. Make a business case to justify the benefits.
- Strengthen our data to support these benefits
- Design a solution to allow new versions of a small number of “stronger” database components to co-exist with legacy versions
- Provide mechanisms to synchronize new database objects with legacy objects real time
- Users continue to utilize legacy interfaces without disruption
- Modernize JUST the executables needed to provide the specified benefit
- Test and implement this small subset
- **THEN...**



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Sub Lovers' Modernization.....



- Step back and review
- Identify what worked well and what didn't
- Use lessons learned, tools created and business rules defined in the previous stage, to help define the specification for the next stage
- Also consider any short term climate changes
- Meanwhile, other projects in process can utilize the new objects, since the data is synchronous
- Investment is focused not on arbitrary targets, but rather assuring that disruption is minimized and that ROI is realized early and often

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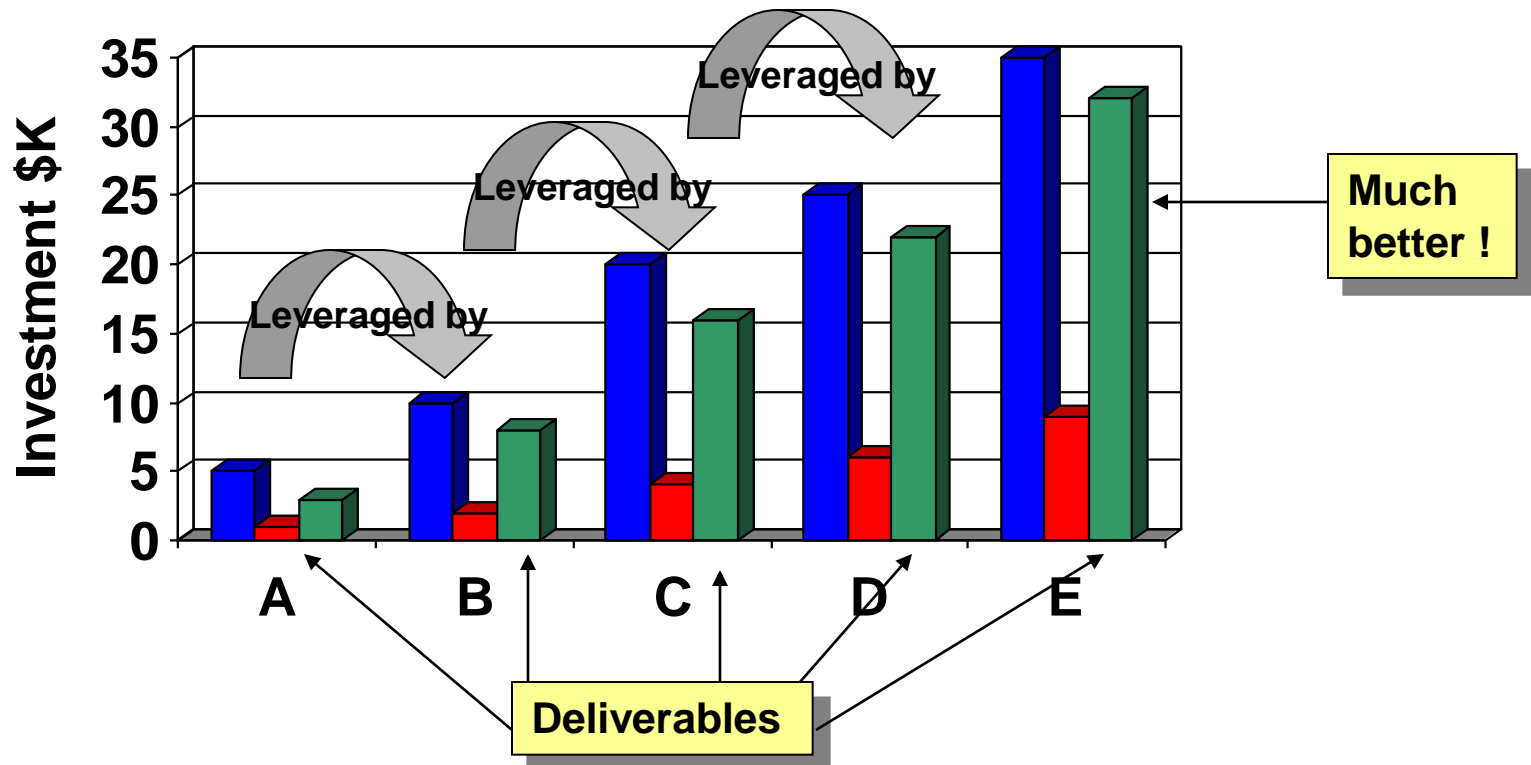


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Sub Lovers' Modernization



■ Investment ■ Disruption ■ Return



No "promised land", just steps on the journey.

Very similar philosophy



Kaizen- What Does It Mean?

Kaizen- What Does It Mean?



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Origins and Definition of Kaizen

In the U.S. **kaizen is often synonymous with "Kaizen Blitz" or "Kaizen Event."** Such events rapidly implement workcells, improve setups or streamline processes. However, a better Japanese word for this activity is **kaikaku**

In Japanese, the **definition of Kaizen is "improvement"** and particularly, **"Continuous Improvement"-- slow, incremental but constant.** Norman Bodek explains this and translates it as **"Quick & Easy Kaizen"**.

Taiichi Ohno and Shigeo Shingo developed both kaizen versions at Toyota. **They are important tools for Lean Manufacturing, the Toyota Production System (TPS), Just In Time (JIT) and other effective manufacturing strategies.**

Large-Scale Vs. Small-Scale Improvement

Large scale improvement is attractive. It promises quantum jumps in productivity, quality and effectiveness. However, it is difficult to implement because it affects many areas, people and processes. The design must be near-perfect because failure courts disaster. **The risks and difficulties work against large-scale improvements.**

Small-scale improvements are easier and faster. The risks are low because they generally have limited effect. However, the accumulated effect is often greater than a single large improvement. The Kaizen Blitz is a localized, smaller scale improvement and Mini-Kaizen are very small-scale improvements.

The Kaizen Blitz

The **Blitz or Event** is a focused, intense, short-term project to improve a process. Substantial resources- Engineering, Maintenance, Cell Operators, and others are available for immediate deployment.

An **event** usually includes training followed by analysis, design, and re-arrangement of a product line or area. A consultant often orchestrates. **The Event normally takes 2-10 days. The results are immediate, dramatic and satisfying.**

Mini-Kaizen

Before the recent popularity of the Blitz, kaizen meant **"Continuous Improvement."** This is the slow accumulation of many small developments in processes and quality that, over 50 years, has helped make Toyota the lowest cost and highest quality automobile company in the world. Let's call these improvements **"Mini Kaizen."**

Mini Kaizen is part of corporate culture. It requires both conscious and sub-conscious thinking about improvements day by day and minute by minute on the part of all employees. It also requires that these same employees possess the skills for this type of thinking.

The mini variation is far more difficult to keep up and takes much longer for results than a blitz. But, as Toyota has demonstrated, **it offers a more sustained competitive advantage.**

Strategos' Kaizen Events

More on Kaizen

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Making our data STRONG !!!.....



What do we mean by that ?

- Your data is your most valuable IT asset – the concrete footer on which apps are built
- Does your data cramp your style ?
- Does it play nicely with apps on other systems ?
- Does it enforce your business rules ?
- Is it self cleaning ?
- Is it self healing ?

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Making our data STRONG !!!.....



Remember - A high powered application written over weak data is a weak application

- Use data types that do some of the work for you (date, time, timestamp, varchar, etc.)
- Use constraints to enforce your business rules no matter how the data gets there
- Use triggers to keep your workflow consistent no matter how the data gets there
- Use SQL functions and procedures to share your business rules with other applications
- Use identity columns instead of complex keys
- Use a vertical instead of a horizontal data model
- Avoid duplicating data, even if a convenience
- Hint - Stop using DDS to build files !!!

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Simple real life example: Master Files.....



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- Insurance agent with LEGACY custom apps (most of which operated in S/36 environment)
- Many data files were not externally defined
- Three different types of customers – industrial, service and governmental. Each had its own Customer Master with its own specialized “fields”.
- Seeking the benefit of an audit trail against these files, and a way to simplify user queries
- Willing to consolidate the files to facilitate modernization.
- **Consider...**

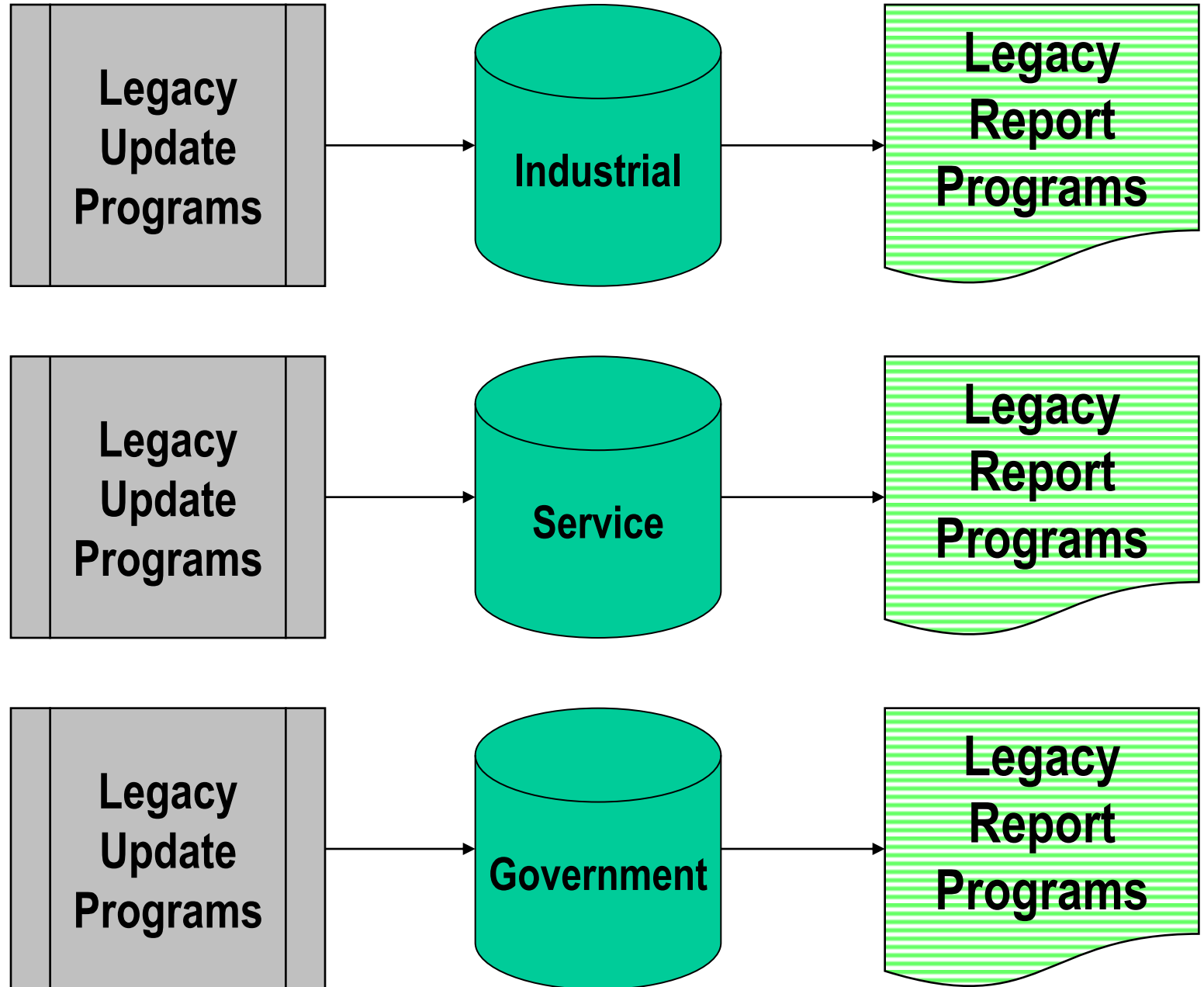


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- MORE...**



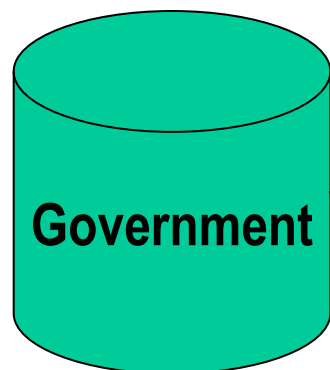
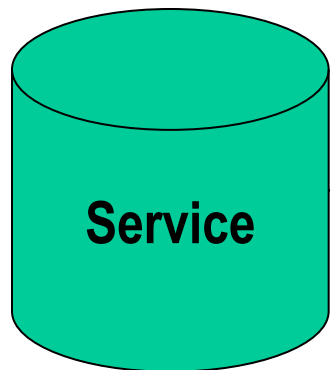
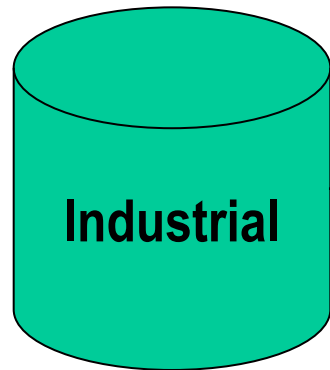


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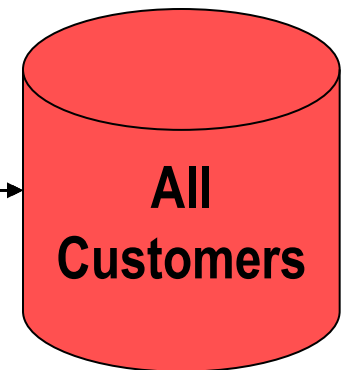
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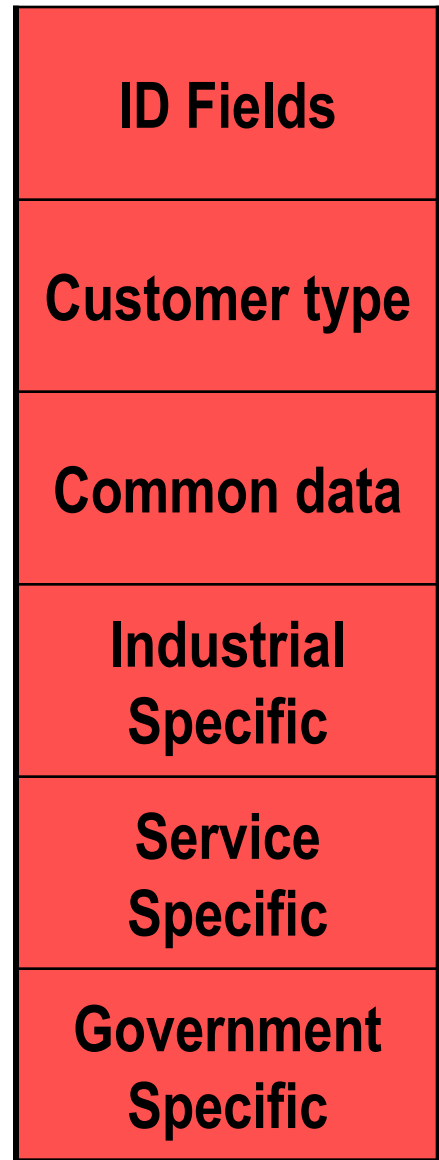
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First things first !



Well, this isn't earth shaking !



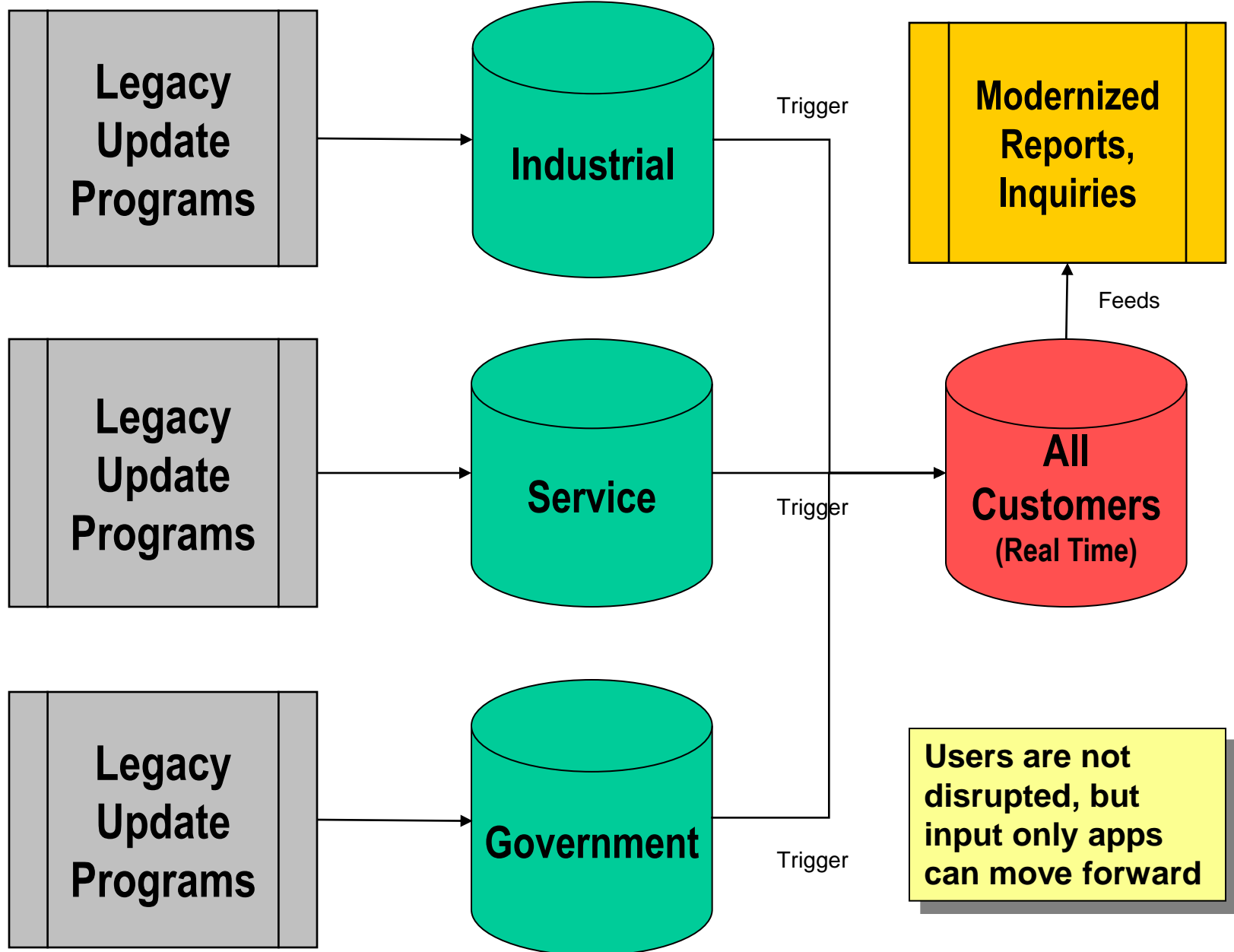


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Users are not disrupted, but input only apps can move forward

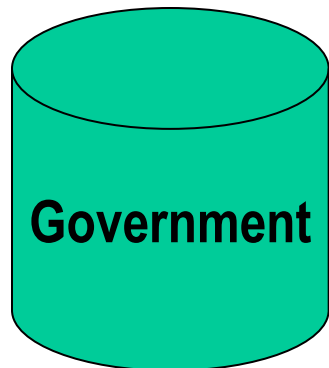
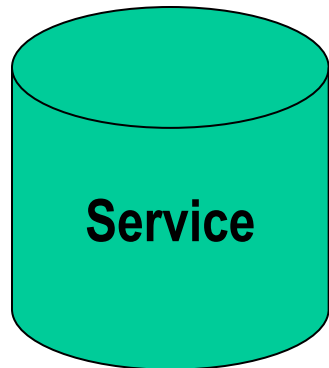
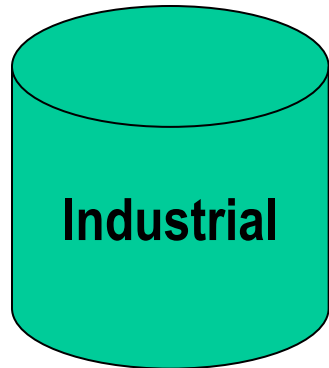


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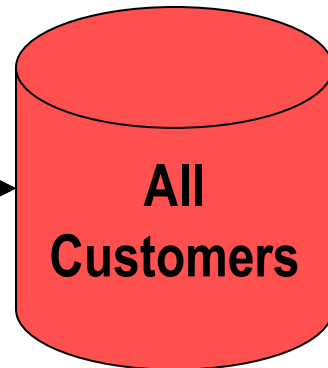
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Modernization and new projects can now take advantage of audit trail.



- ID Fields**
- Customer type**
- User ID, Workstation**
- Time Stamp**
- Record Images**
- Comment or Reason (opt.)**

Trigger

Trigger

Trigger

Trigger



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What about the legacy update programs....



- We left these for last
- They are a small subset, but represent the most likely source of user disruption
- Lessons learned and reusable logic created by the previous steps help shape the refit strategy
- Any issues arising from this milestone are limited to the small subset – no “big bang”

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Why this approach.....



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- Allows for gradual and/or staged refit of dependent programs (inquiries, reports, etc.)
- Overall less disruptive than a “root canal”
- Eliminates need for time consuming wholesale database conversion (done real time instead)
- Allows new development to conform to new database structure
- Allows users to take advantage of new audit trail
- Allows in-house developers to leverage new skills under less duress
- Other less obvious benefits



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Simple real life example: Claims Files.....



- Same insurance agent
- Multiple legacy claims files with a similar structured lifecycle
- Touched by many users
- Hence, are subject to delays in processing
- **Consider...**

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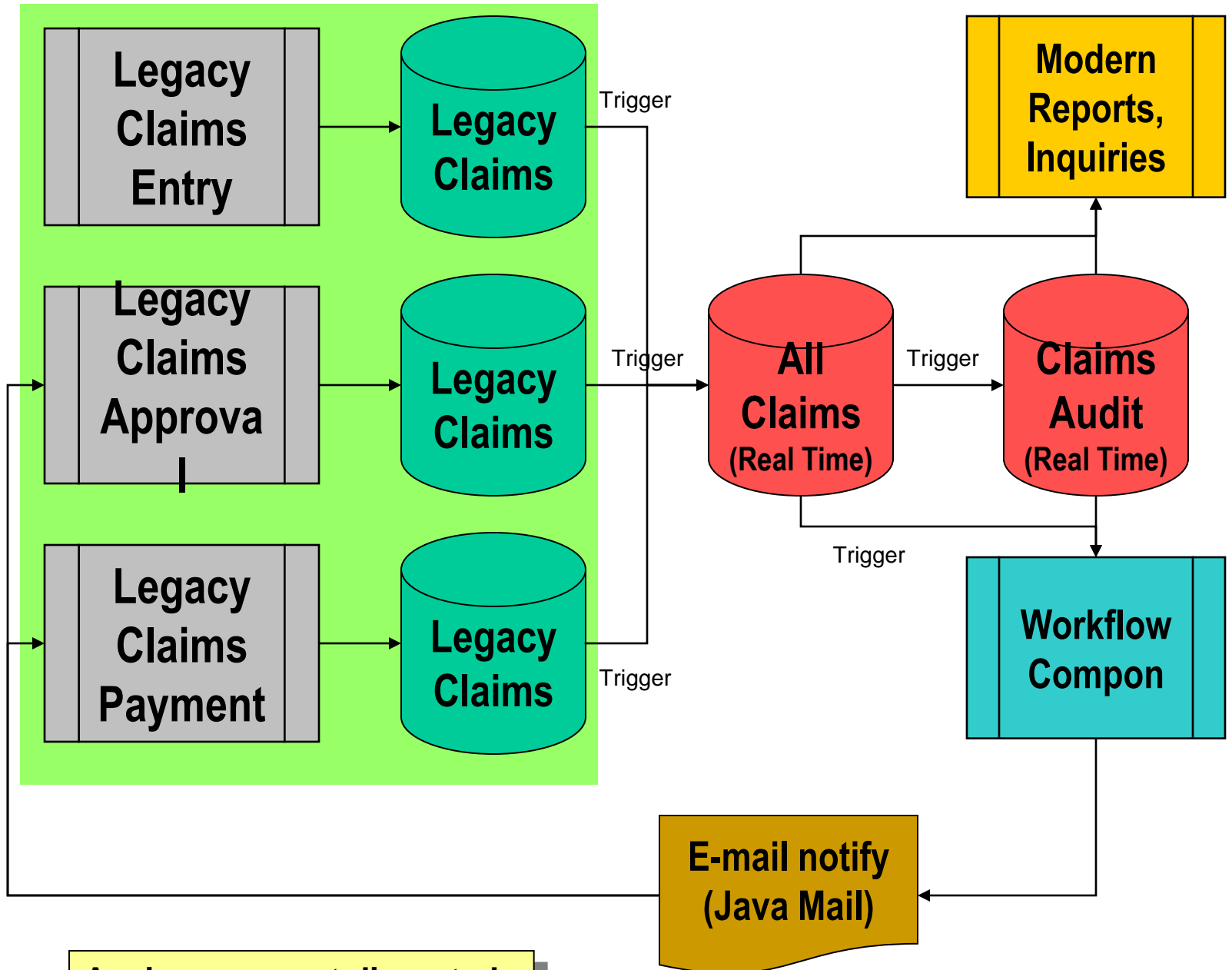


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Again, users not disrupted.



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Now wait just a darn minute !...



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CLUB
STEVE PERRY
KUNG FU
ONIONS
NUCLEAR
COOL WHIP
MORE...

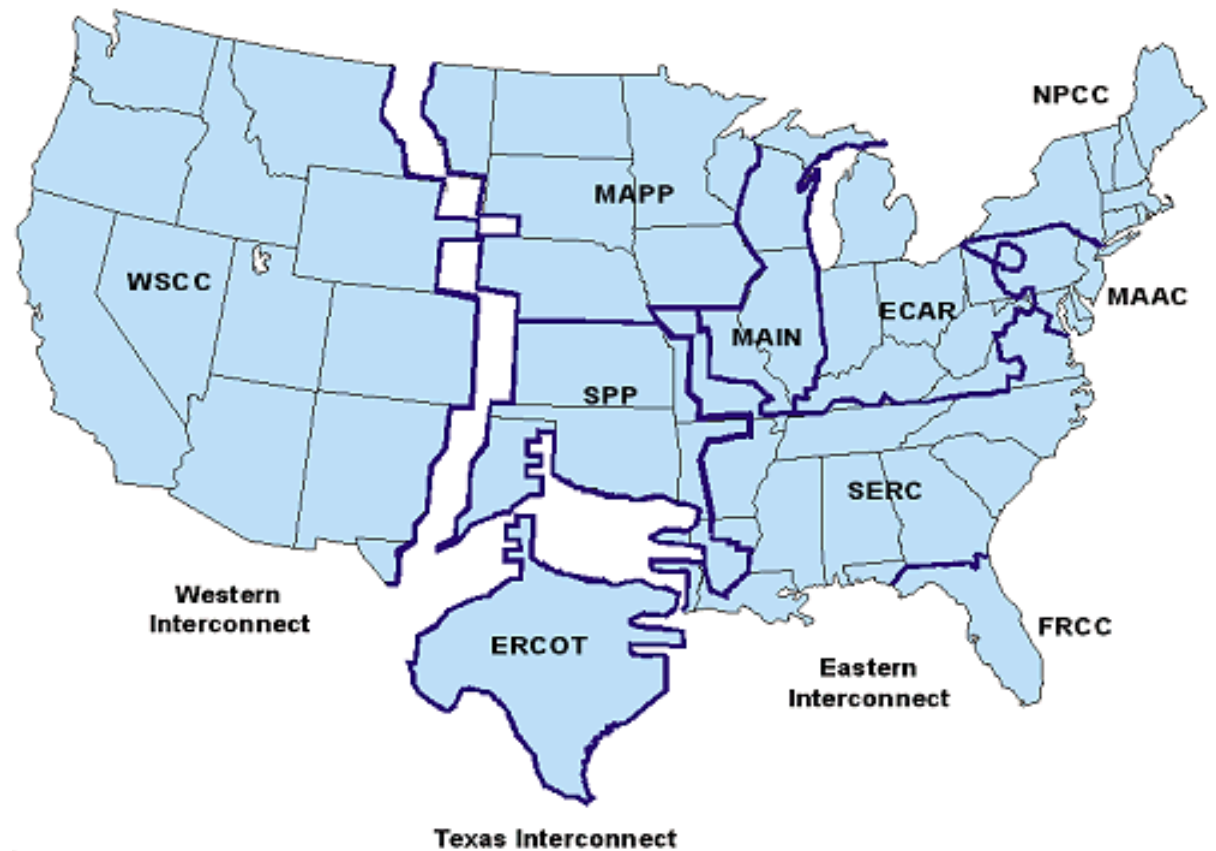
- You're saying that we should waste perfectly good money to maintain 2 systems at the same time, without a deadline or a budget ?
- No, we should invest perfectly good money to assure smooth, steady improvement, minimize risk and disruption, and protect our investment altogether. We should focus on value and business case, not arbitrary targets.
- **And oh, by the way...**

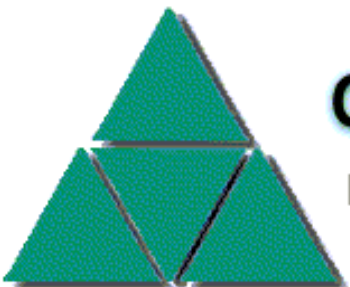


Breaking News

Romulans Cripple U.S. Power Grids

President says, "Told you to use nuc-u-ler power"





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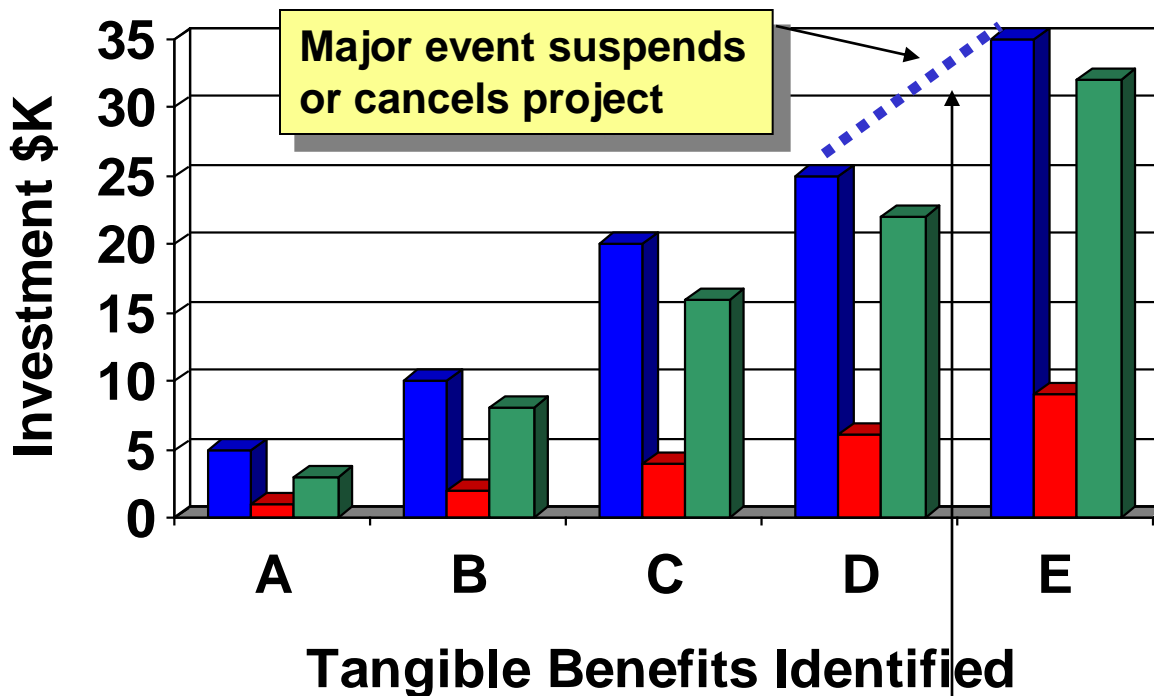


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Sub Lovers' Modernization



■ Investment ■ Disruption ■ Return



Not to worry ! Most of our investment to date has yielded useable benefits to help our bottom line !



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The Modernization Meal

a.k.a. "Burgers, Subs & Pumpkin Pie"



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The Pumpkin Pie...



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Feature:	Analogous to:
The aroma while baking	Enjoying the benefits of modernization long before "completion"
The crust	Leadership which holds the entire process together
The filling	A delicate blend of technical and non technical ingredients
The whipped topping	The resulting improvement in customer service levels
Served in slices to be shared with others	Total team effort with many hands making light work



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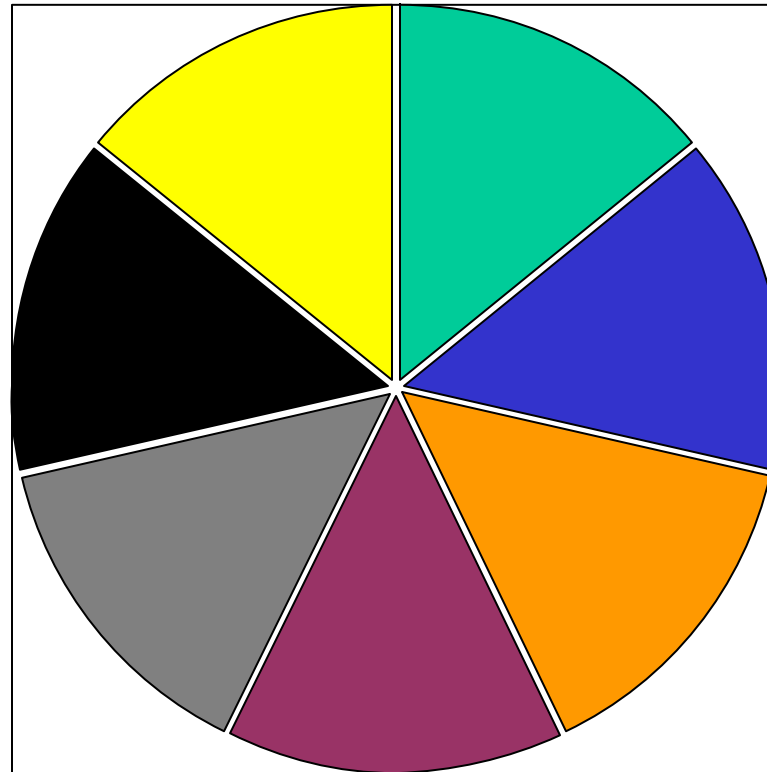


The Pumpkin Pie !

(a.k.a. the makings of a successful modernization)



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- Education
- Technology
- Software
- Externalization
- H.A.
- Leadership
- Best Practices

Some are common sense, some not

Just like Mom used to make – secret ingredients made with love !



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Education.....



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- Perhaps the most important, yet the most neglected ingredient
- The best software, best practices and best tooling are meaningless without the proper education to bring it to life
- Insufficient education is a major contributor to underutilization (“dead money”), and greatly adds to the cost of development and support
- What’s worse – midrange developers have been left even further behind due to the stability of the platform
- **Consider the IBM roadmap...**

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IBM iSeries Developer Roadmap



<i>Traditional</i>	<i>Improve Your Productivity</i>	<i>Enhance the End User Experience</i>	<i>Create a Modular Architecture</i>	<i>Integrate Applications</i>	<i>Integrate Business Processes</i>
--------------------	----------------------------------	--	--------------------------------------	-------------------------------	-------------------------------------

5250	5250	5250 GUI	5250 GUI	5250 GUI	5250 GUI
------	------	----------	----------	----------	----------

User Interface

RPG/COBOL	RPG/COBOL	RPG/COBOL	ILE/Java	ILE	ILE and Java	Java/EJB
-----------	-----------	-----------	----------	-----	--------------	----------

Chances are, you are here

IBM is headed here – with or without you ! So are your competitors !

Application Technology

Nice color, anyway !

HTML/JSP	HTML/JSP	HTML/JSP	HTML/JSP	HTML/JSP	HTML/JSP	HTML/JSP
Servlets	Servlets	Servlets	Servlets	Servlets	Servlets	Servlets
Portlets	Portlets	Portlets	Portlets	Portlets	Portlets	Portlets
XML	XML	XML	XML	XML	XML	XML
			Connectors	Connectors	Connectors	Process Choreography
			Web Services	Web Services	Web Services	Web Services
	DB2 and SQL		DB2 and SQL	DB2 and SQL	DB2 and SQL	DB2 and SQL

And don't think it will be easier on any other platform !

21st Century Midrange Developer Roadmap



**Not Your
Father's RPG**
2 DAYS



**Procedures
ILE Prgm'g**
1 DAY



**RPG IV & SQL
A 1-2 Punch**
1 DAY



**Triggers
& API's**
1 DAY



**Adv. RPG & SQL
The Knockout**
2 DAYS



**Extending
To The Web**
1 DAY



**Externalizing
Modifications**
1 DAY



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Typical midrange developer's day

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Firefighting/Troubleshooting (FFT): X%

- Fielding user distress calls, determine cause and scope, etc..
- Craft a repair strategy and hope it doesn't break something else.
- Common with patchwork systems or modified 3rd party code

Cloning/Re-inventing (CR): Y%

- Copying working code and modifying the copy for other use.
- Risk that business rules are not uniformly applied
- Adds to the cost of company policy changes

Fighting Limitations (FL): Z%

- Having to operate within the bounds of legacy technology
- Force fitting solutions into "comfort zone" techniques
- Overextended hardware

Satisfactory Productivity (SP): 100% - (X + Y + Z)

- Operating at expected efficiency based on the environment
- High percentage here doesn't necessarily mean high efficiency



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Impact of Education on Developer Throughput				
Programmers			Throughput	
ID	Task	%Day	Avg. S&B:	\$60,000
A	FFT	25%	FFT	\$15,000
	CR	25%	CR	\$15,000
	FL	25%	FL	\$15,000
	SP	25%	SP	\$15,000
	Tot	100%	Tot	\$60,000
B	FFT	10%	FFT	\$6,000
	CR	40%	CR	\$24,000
	FL	30%	FL	\$18,000
	SP	20%	SP	\$12,000
	Tot	100%	Tot	\$60,000
C	FFT	30%	FFT	\$18,000
	CR	30%	CR	\$18,000
	FL	15%	FL	\$9,000
	SP	25%	SP	\$15,000
	Tot	100%	Tot	\$60,000
D	FFT	40%	FFT	\$24,000
	CR	15%	CR	\$9,000
	FL	30%	FL	\$18,000
	SP	15%	SP	\$9,000
	Tot	100%	Tot	\$60,000
Tot	FFT	1.05	FFT	\$63,000
	CR	1.10	CR	\$66,000
	FL	1.00	FL	\$60,000
	SP	0.85	SP	\$51,000
	Tot	4.00	Tot	\$240,000

What if we could improve by reducing FFT, CR and FL ?

Download this analysis:
<http://www.gemko.com/commoncode>



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How a “21st Century” education can help reduce the negatives

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Fighting Limitations (FL):

- Students get experience with many different technologies
- Can use whichever toolkit best solves the task at hand
- Easily mix technologies within applications

Cloning/Re-inventing (CR):

- Philosophy of defining key business rules once and only once
- Policy changes easily implemented, uniform rules enforcement
- Spend more time inventing, less time re-inventing

Firefighting/Troubleshooting (FFT):

- Ripple effect of improving FL and CR
- Higher quality applications contain fewer failure points
- Triage and correction simplified with better tooling and methods

Satisfactory Productivity (SP):

- Increases as others are reduced
- Now based on a higher standard, thus a double improvement



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Impact of Education on Developer Throughput												
Programmers			Throughput			Impact of Education				Result Throughput		
ID	Task	%Day	Avg. S&B:	\$60,000	ID	Task	%Chg	Result	Avg. S&B:	\$60,000		
A	FFT	25%	A	FFT	\$15,000	A	FFT	-5%	20%	A	FFT	\$12,000
	CR	25%		CR	\$15,000		CR	-5%	20%		CR	\$12,000
	FL	25%		FL	\$15,000		FL	-5%	20%		FL	\$12,000
	SP	25%		SP	\$15,000		SP	15%	40%		SP	\$24,000
	Tot	100%		Tot	\$60,000		Tot	0%	100%		Tot	\$60,000
B	FFT	10%	B	FFT	\$6,000	B	FFT	-5%	5%	B	FFT	\$3,000
	CR	40%		CR	\$24,000		CR	-5%	35%		CR	\$21,000
	FL	30%		FL	\$18,000		FL	-5%	25%		FL	\$15,000
	SP	20%		SP	\$12,000		SP	15%	35%		SP	\$21,000
	Tot	100%		Tot	\$60,000		Tot	0%	100%		Tot	\$60,000
C	FFT	30%	C	FFT	\$18,000	C	FFT	-5%	25%	C	FFT	\$15,000
	CR	30%		CR	\$18,000		CR	-5%	25%		CR	\$15,000
	FL	15%		FL	\$9,000		FL	-5%	10%		FL	\$6,000
	SP	25%		SP	\$15,000		SP	15%	40%		SP	\$24,000
	Tot	100%		Tot	\$60,000		Tot	0%	100%		Tot	\$60,000
D	FFT	40%	D	FFT	\$24,000	D	FFT	-5%	35%	D	FFT	\$21,000
	CR	15%		CR	\$9,000		CR	-5%	10%		CR	\$6,000
	FL	30%		FL	\$18,000		FL	-5%	25%		FL	\$15,000
	SP	15%		SP	\$9,000		SP	15%	30%		SP	\$18,000
	Tot	100%		Tot	\$60,000		Tot	0%	100%		Tot	\$60,000
Tot	FFT	1.05	Tot	FFT	\$63,000	Tot	FFT	-0.20	0.85	Tot	FFT	\$51,000
	CR	1.10		CR	\$66,000		CR	-0.20	0.90		CR	\$54,000
	FL	1.00		FL	\$60,000		FL	-0.20	0.80		FL	\$48,000
	SP	0.85		SP	\$51,000		SP	0.60	1.45		SP	\$87,000
	Tot	4.00		Tot	\$240,000		Tot	0.00	4.00		Tot	\$240,000
										Net Chg	\$36,000	



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Technology.....



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- i5 is an ideal platform for modernization
- Integrated, secure, scalable, reliable
- But eventually, even the best midrange systems get old
- The older the system, the more difficult it will be to modernize
- Hint – don't try to modernize on a model 620 to 256 meg of memory !
- As a lessee of IBM i5 hardware, you can ensure regular, predictable upgrades to state of the art hardware

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Software....



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- i5/OS Comes with ALL the development tools you may EVER need, **and financed by YOU !**
- Also comes with DB2, security, virtualization, communications, web serving and file/print sharing built right in, **and financed by YOU !**
- As a licensee of 3rd party application software, you are normally entitled to new versions as they are released. This software is based on years of research and business case studies, **and financed by YOU !**
- So any company that lags behind in their software releases is squandering its investment !

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Externalization.....

- Breaking the endless, destructive cycle of “bastardizing” 3rd party software
- Provide ample, equivalent custom function, based on business case, external to the software
- Facilitates a return to a quality tested, certified software products
- Re-qualify for 3rd party support
- Significantly reduces the cost and effort of implementing every subsequent release
- A separate workshop and discussion topic – “Get Those Mods Outta Here”

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H.A.....

- H.A. stands for Hard @ss
- Somebody in the organization needs to be the H.A.
- Preferable someone with a top floor corner office (ex. "The Donald")
- Enforce commitment and compliance
- Say NO to frivolous customizations
- Stay focused on the business case
- Key player in externalization projects
- Without the H.A., the burger lovers will undoubtedly take over

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Best Practices....



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- Writing business logic once
- Not force fitting technology simply because it is in the comfort zone
- Taking advantage of available resources (web casts, published case studies, etc.)
- Regular cleanup & archival (data, programs, documents, etc.)

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Failure is not an option.....

Why Modernization Projects Fail

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Gradual, staged improvements

■ Disruption

□ Successful

I really like these odds now !

■ Satisfaction

■ Time

POOGI – not focused on a fixed deadline

Everyone's involved, not just MIS

■ Return

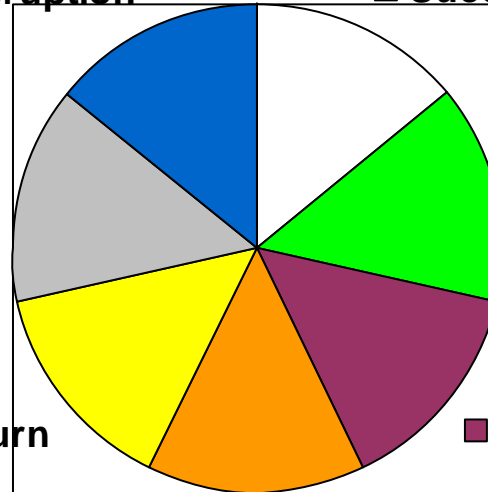
■ Budget

POOGI – no fixed budget – VALUE is the benchmark

Better utilization of existing resources

■ Spec

Continuously improved based on experience and climate





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Summary.....

- Modernization is a JOURNEY, not a destination
- Not a technology solution, it's a business solution
- Taking better advantage of the resources you have
- Making a business case for small, staged improvements
- Should be a positive experience for everyone, not a root canal
- **REMINDER – Do lunch tomorrow ?**

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Thank you for attending !

“Now, Eat Fresh !”

Christopher F. Burns, Sr.
GEMKO Information Group
cburns@gemko.com





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