



# The 'What,' 'Why' and 'How' of Modernization



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# Abstract

'Modernization' is the buzz word of the day, but what exactly defines a successful modernization effort? How do you achieve the results you want without blowing your budget or taking too long? In this session, we will explain why investing in a modernization effort is critical, share some modernization lessons learned and define a path to realizing your modernization goals. You will learn the 'secret sauce' of modernization – automation – and we will define automation strategies that can be used to analyze, model, remediate, and transform legacy code, significantly reducing the time required to integrate modern technologies, such as web and mobile, into your legacy code.



# Agenda

- What is modernization?
- Why modernize?
- What is the best way to do it?
- How do I know it works?



We'll explain what the word 'modernization' means as well as the many reasons you should be thinking about doing it. Then, we'll talk about how you can do it safely, sanely and affordably. Finally, we'll show some proof points, to help you see that it is possible for you.

## Speaker Bio



- CTO of CM First Group, a multinational software and services company focused on software development and modernization of IBM i/z enterprise solutions
- Prior experience with CA Technologies and Kraft Foods
- Speaker at IBM and CA events on Legacy Modernization
- From Austin, Texas



I am CTO of CM First Group, we are focused on helping folks modernize IBM System i and System z applications. I started my career as a COBOL and ASM programmer for Kraft

## Speaker Bio



- Chief Innovator of Kalm Kreative, Inc.
- Consultant to CM First
- Prior technical and pre-sales experience with CA, BMC Software, Cybermation and various customer sites
- Speaker at SHARE and CMG
- From Walnut Creek, CA

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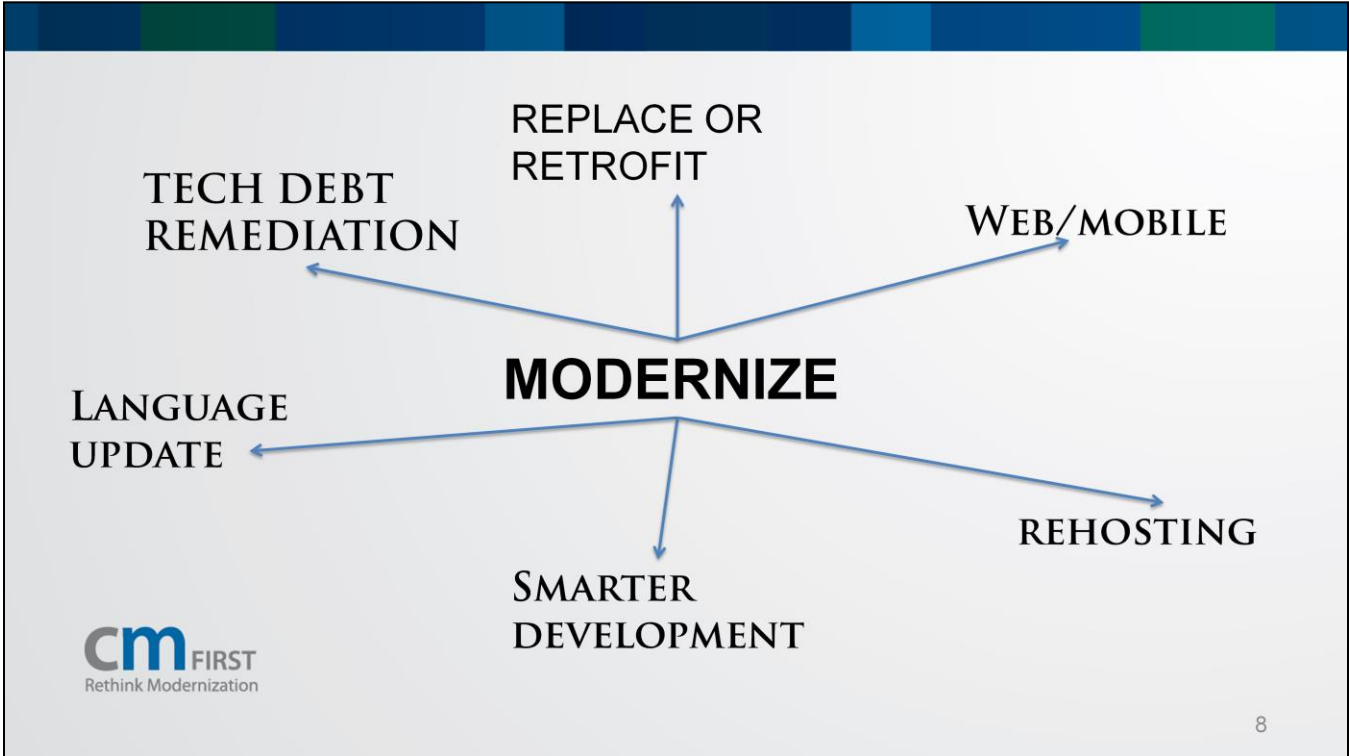
I am a long-time performance and capacity techie who is now helping companies spread their message thru quality writing and messaging.

# What is Modernization?



What do we mean by modernization?

*“I always say that modernization is not an abstract thing; it's a very specific task.”  
- Dmitry Medvedev*



Some of the modernization options available



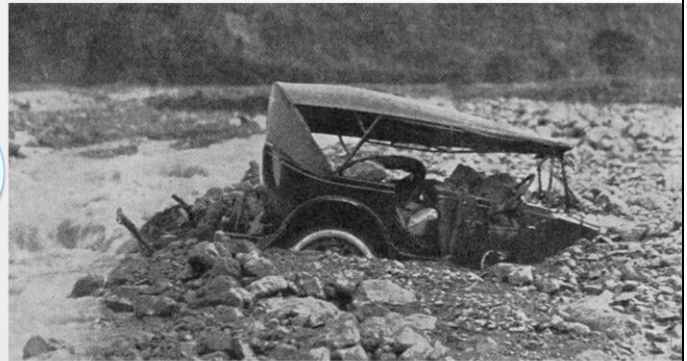
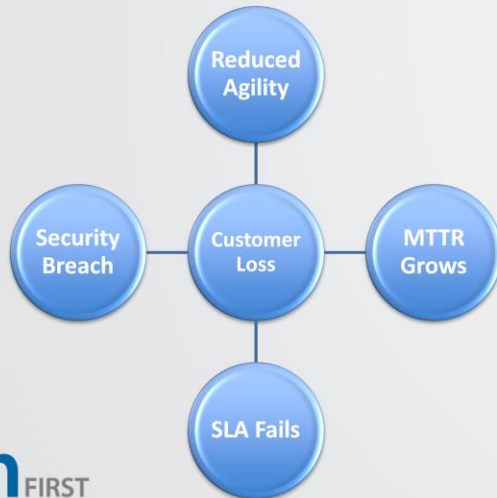
# Replace or Retrofit?



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Take what you have, like a nice house, and fix up the parts that don't work.  
Much more costly, time-consuming and risky to start from scratch.

# Technical Debt – Why?



You may have started with a sturdy foundation, but if you don't keep building the same way, you don't get a good result. These are some of the general things that spawn debt. There are a lot of causes, but the reality is that everyone has this problem and if you don't get on it, it gets worse. It keeps you stuck.

## Short Cuts Taken

Scope creep

Tight Deadlines

Design on the fly

Different Teams

Outsourced?  
Clarity issues

# Rehosting – Why?

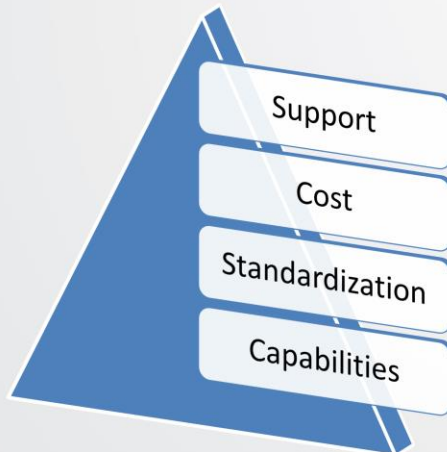


We're not talking about getting off the mainframe – there's lots more than that here

You may wish to rehost because you:

- No longer have people to support your platform or your vendor is no longer really doing a great job
- Some platforms cost too much either in hardware or software
- Standardizing on fewer hardware types can be cheaper to support and safer
- As time goes on, some platforms just have the features you want; others don't. You have to go with what speeds your business.

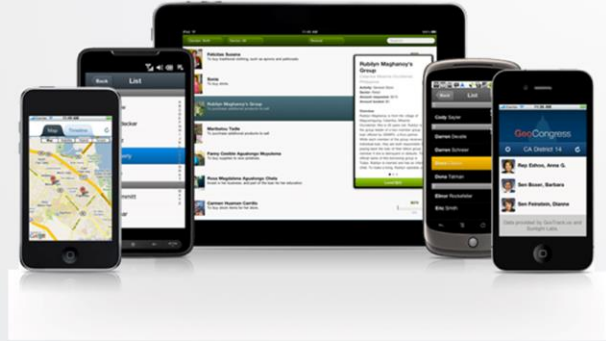
# Language Updates – Why?



You may wish to move to more modern languages because:

- No longer have people who code well in that language
- The cost of support can get high when fewer people do it
- Standardizing on fewer languages can be advantageous and reduce risk
- Older languages may not support functionalities you need

# Web & Mobile

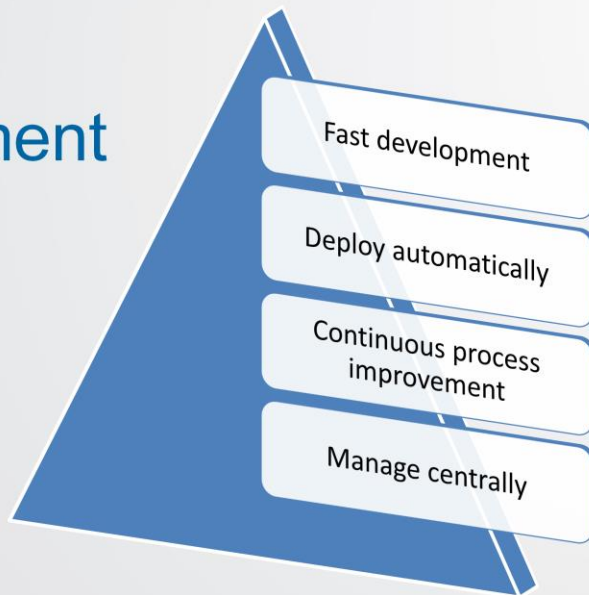


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Simply put – it's where everyone is. People interact with your systems wherever they are and they aren't carrying around their PCs. If you aren't mobile and web-enabled, you're losing business. It's that simple. And even your employees benefit. There are so many ways to empower and increase productivity if you can spin applications out to devices they want to use.

# Smarter Development



No matter what you are using for development, you need to find a way to make it work better. The old methods simply can't keep up. For this, you have several good options.

# ARAD



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Want the rocky road of starting from scratch? Slow, error-prone and complicated. Or the highway?

Architected Rapid Application Development – the name says it all. These solutions are a technical model developed from object-oriented analysis and design tools, which incorporates analysis and design patterns and frameworks. Typically, organizations can generate 50% to 70% of source artifacts from the patterns, frameworks and (optional) models. Increasingly, organizations are blending traditional iterative methods used with ARAD with agile principles and practices to create a hybrid approach.



# BPM



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BPM is the business model view of speeding development. BPM is one or all of these things and facilitates wrapping together a variety of processes into new workloads often using APIs.

A comprehensive, well understood and **documented set of standardized processes** – typically defined within a process framework to drive transparency and efficiency. aka *BPM*

An approach to **process improvement** including an approach to measuring and monitoring day to day business processes for continuous improvement and efficiency. aka *BPI/BPM* Use of information technology/software including process modeling, process simulation, process repositories, workflow, integration, reporting and other technologies to facilitate bullets 1 and 2 as well as **automate and further optimize processes**. aka *BPMS/SOA/BI*



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Business rules don't change a lot – they simply get polished and enhanced over time. BPM makes use of these well-honed and tested rules to create new capabilities, continuing to 'polish the diamond.'





# TRADITION

JUST BECAUSE YOU'VE ALWAYS DONE IT THAT WAY  
DOESN'T MEAN IT'S NOT INCREDIBLY STUPID.

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[www.despair.com](http://www.despair.com)

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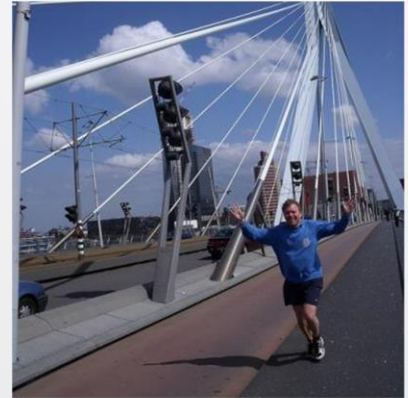
As the creative types at Despair.com note, what you are doing now might not serve you now or in the future, even if it was great at one time. In a rapidly evolving world, if you stand still, you fall behind. Check this site out to get a great office gift.

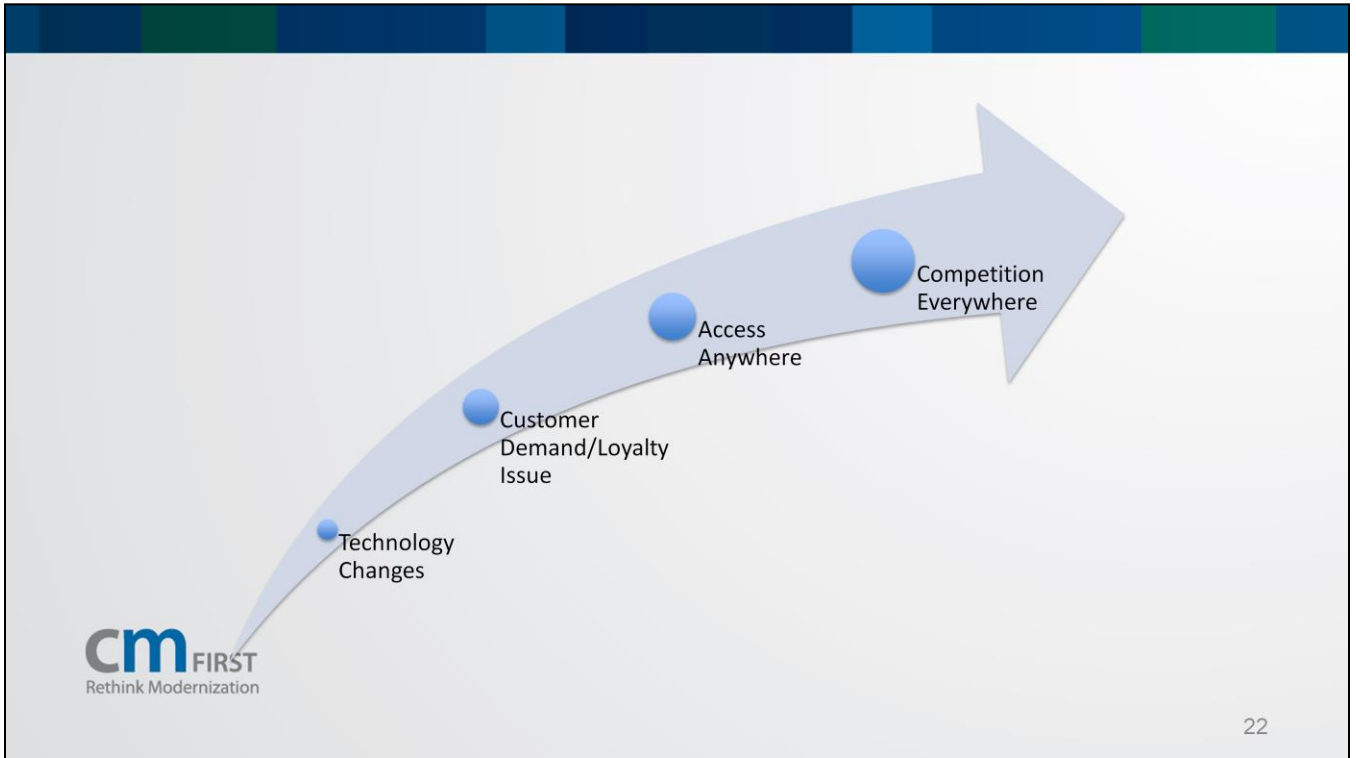


It's a race out there. If you aren't actively competing, modernizing and challenging the status quo, you're falling behind. Modernization is an investment, but one that is a fundamental as making sure your house has a good foundation.

**“A competitive world offers two possibilities. You can lose. Or, if you want to win, you can change.”**

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These are all factors that dictate the need to change.

First, tech has changed. Where at one time, you had few options for hardware and software, so you made compromises, now you have a great deal more choice and the ability to tailor your infrastructure directly to your needs. Customers who once interacted with you only by phone now manage accounts and purchases thru web sites and mobile devices. They are no longer loyal so will go to the best site, the best company to meet their immediate needs. Keep up or lose out. Everyone, including your employees, want access everywhere – where they are, when they are and on whatever device they choose. Finally, competition comes from surprising places. Where you might have kept an edge over traditional competitors, now, non-traditional competitors are out there. Uber and Lyft take on cabs and limos, airbnb takes on hotels; who else could compete for your customers if you don't have the best solutions, the easiest interfaces?



危機

Danger Opportunity

You are in a modernization 'crisis' which presents danger, if you don't embrace it and opportunity if you do. What will you choose?



# How Best to Modernize?



But it's a lot of work – why do it?

# Prioritize Opportunities



You have to know where to start. Work with the business to understand what issues are the biggest. What needs to be handled first?

## Get Buy-In



If senior management doesn't buy into this, it won't happen. Too many areas need to be on board and costs need to be funded. Make sure this is championed at the highest levels.

## Replace or Refit?



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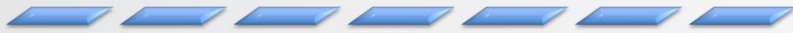
Like an aging B737, you can either buy a whole new package (or rewrite from scratch in programming terms) or you can fix what you have for a whole lot less.

# IT Cost?

Technical Debt Remediation



ARAD Conversion



Agile Development



BPM



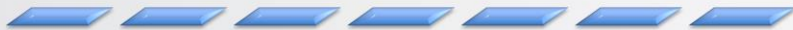
If cost is the issue, these are some options to consider. Technical debt adds a lot to the ongoing cost of applications. Eliminate it to save money. When you convert to an easier, more robust development methodology, you save time and money by creating needed applications quickly and being able to fix and enhance existing apps safely and quickly. BPM reduces the cost of development by again, helping to create a better way of taking the investment you have already made and mining it for more functionality.

# Customer Satisfaction?

Technical Debt Remediation



Web Enablement



Mobile Enablement



Technical debt reduction also leads to higher availability and better performance, which are competitive advantages. Web and mobile-enablement are no longer 'nice-to-have'. You have to have them. Customers demand them and even long-time, loyal customers will abandon you if you can't get these done. And deploying these to your employees makes them much more efficient and provides a better conversation with customers. Your competitors will do it, even if you don't.

# Key Factors

Automation

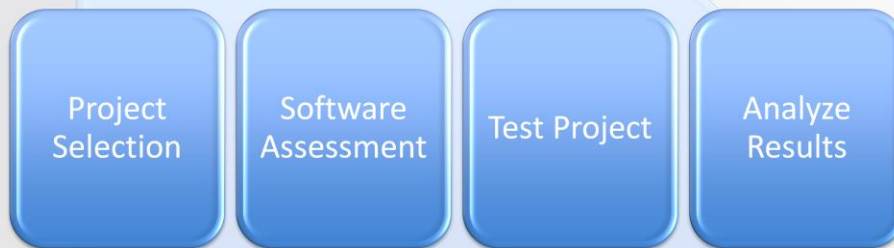
Quick Learning Curve

Fast Development

Enterprise-wide

When you begin to look at a way to modernize, you need to consider what it will offer you. You need as much automation as possible. Otherwise, you won't be able to get it done in a reasonable timeframe. Some challenges, if not automated, simply aren't feasible. You also need the solution to be easy to learn. Development must be fast and efficient. And of course, the solution should deploy on and work on all your desired platforms.

# Getting Started



Once you have a list of priorities and management buy-in, you next want to pick a good project. This should be the veritable 'low-hanging fruit' – a lower risk, high reward choice to vet your approach and get a quick win. This will help to spur other projects. Next, do a good software assessment, mapping your requirements carefully against the available solutions. This assessment should include a POC so you can verify the vendor's solution. Then execute the project. Finally, analyze the results, note things you could do better and then plan the next one. This can be a part of your continuous process improvement plan for any modernization effort.



# What do you need in your software?

Automation

Maintainability

Assurance

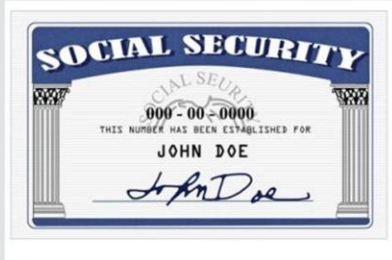
You want great automation so you don't have to do everything manually. You need it to be maintainable and easy to enhance. And you need assurance that the project will be completed on time and within budget, without introducing risk or uncertainty into your production environment. And did we say it should be easy?

# Proof Points



The best way to see how this works is to give proof points of how it can work in the real world.

# Social Security Administration & FSTAP



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30  
250 MM  
250+  
17+  
93%

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SSA convened the Future System Technology Advisor panel (FSTAP) in 2010 to look at modernization challenges. Needed to migrate their customer database system to DB2. But this spawned the discussion of what else they needed to modernize. They had some challenges. Their code base was 30+ years old, they had 250 MM lines of code running on over 250 major systems, 17 of which were mainframes, and 93% of their budget was dedicated to maintenance. And time was not on their side. They had to make major changes to Medicare and Medicaid. The biggest challenge was technical debt remediation to open the possibility of modernization.

## A Code Migration Case Study - Belharra / Ets-Dupouy SBCC

Green Screen

ARAD

Mobile

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```
IBM i Internal System
User ID:          Password:
Program/procedure:  Current library:

IBM's internal system must only be
used for conducting IBM's business
or for purposes authorized by IBM
management.
Use is subject to audit at any time
by IBM management.
You must ensure you have proper
permissions on your files!
For help submit your requests to
http://w3.torlab.ibm.com/help

(C) COPYRIGHT IBM CORP. 1980, 2002.
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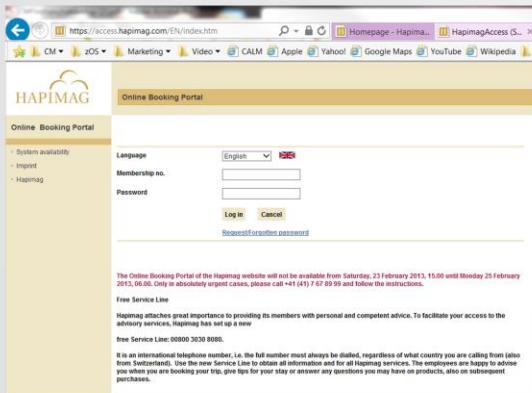
belharra

Belharra, IBM i Integrator in France worked with us to help Ets-Dupouy SBCC, a Specialty Food Exporter, migrate green screen applications to an ARAD platform. Knew they couldn't risk or pay for a complete rewrite. Also didn't want to try another ERP. At the same time, they were concerned about a long staff learning curve. They also needed to get to mobile. What needed to happen was:

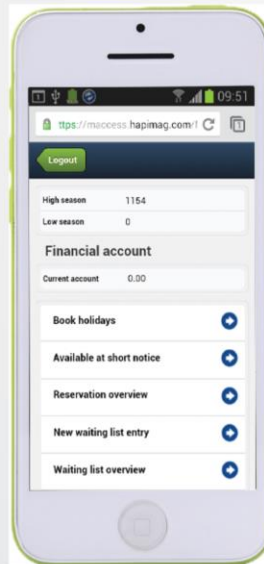
- Transform 10K Function Objects in legacy application to ARAD / Java / Linux with >95%+ Function Objects Automated
- Rewrite platform specific code
- Readily transform applications into web and mobile apps using

Tomcat / HTML5 / JavaScript / CSS but without requiring expertise in these areas from programmers. A mobile solution need to be easy to create and run on all major mobile devices

# Hapimag – Web/Mobile Enablement



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Hapimag is a vacation planning company, offering customers a unique vacation experience. Customers demanded a better way to book than simply calling the reps. This meant a major overhaul of old systems to provide the web and mobile experience they needed. But in a timeframe that surprised everyone, the use of the right software was able to take their existing applications and transform them to provide the interfaces required. Again, the learning curve wasn't an issue. You simply need to pick the right way to approach the problem.

## United Heritage – Mobile Success



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Mobile isn't just for customers. At United Heritage, their agents now can help a customer design an insurance policy customized to them by using the new apps on their cell phones. This closes a lot more business and makes sales people more successful. And they did this in just a few months with staff that didn't know mobile technologies, but now can create good applications on the fly.

# Take 1

Get Buy-In

Pick the Right Projects

Buy the Best Solution

Assess and Repeat



## Questions / Feedback



Before we conclude, are there any questions?



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# Modernize and gain the competitive edge

[john.rhodes@cmfirstgroup.com](mailto:john.rhodes@cmfirstgroup.com)

Modernization may encompass a lot of things, but the main message is – you need to start looking at how you can do it. Companies must move forward or fail. And you can take the lead with a good process and an optimal approach.