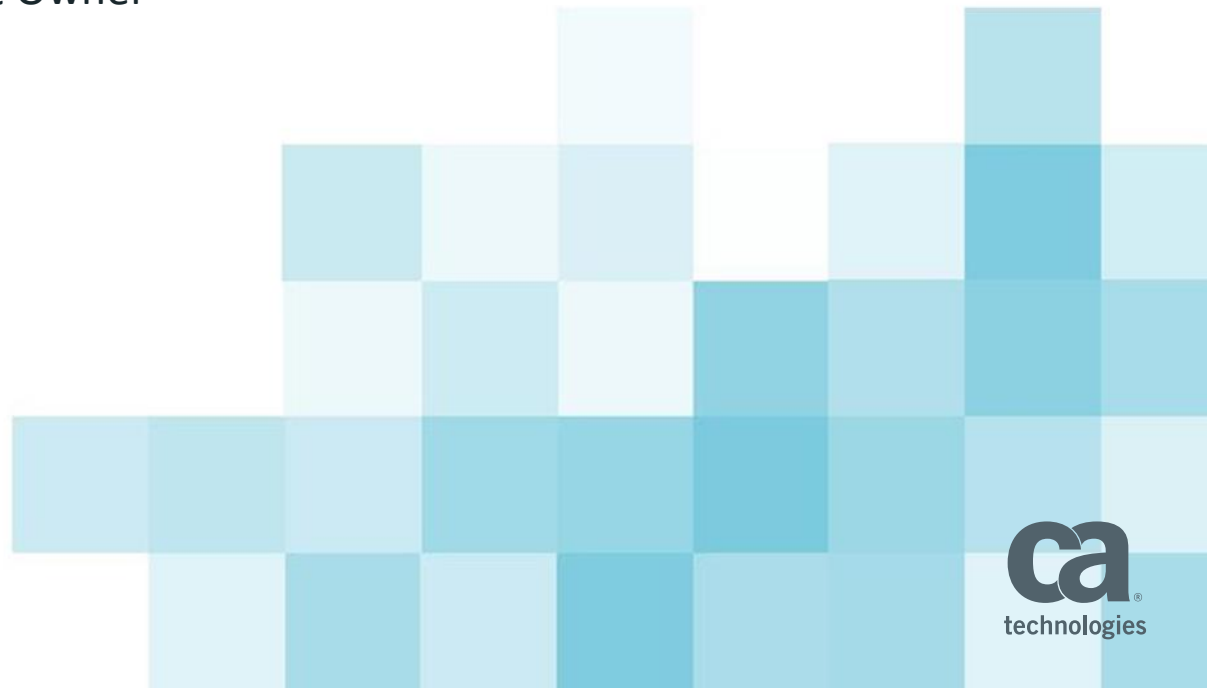


CA 2E Update 2016 – User Group Product Update and Roadmap

Steve Solomon – Product Manager

Vijaya Kumar Dasari – Product Owner

July 2016



Agenda

1

CA TECHNOLOGIES: BUSINESS REWRITTEN BY SOFTWARE

2

AGILE @ CA

3

CA 2E RELEASES

4

CA 2E RELEASE 8.7 REVIEW

5

CA 2E FUTURES

6

TRANSFORMING CA 2E ASSETS , LIVE DEMO

7

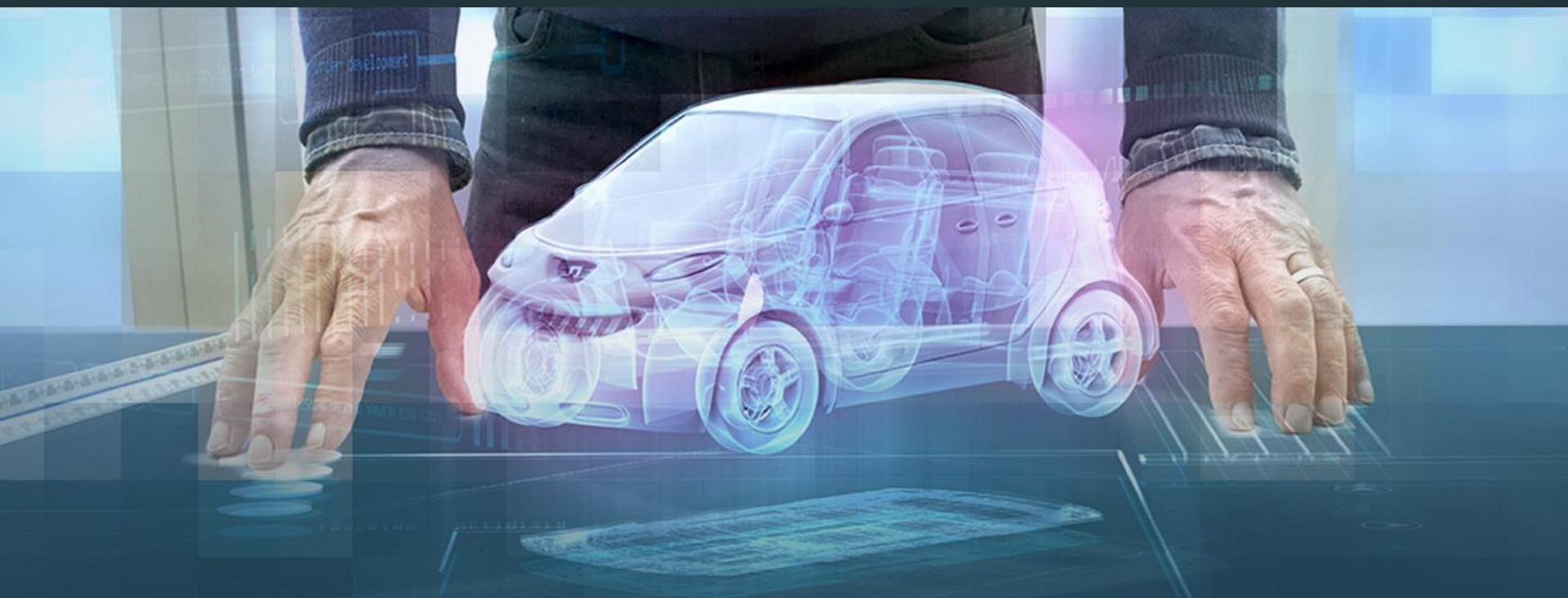
Q&A

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Business, rewritten by software™

From planning to development to management to security, at CA we create software that fuels transformation for companies in the application economy.

The journey to digital transformation. Where are you?

78% of enterprises believe that the shift to becoming a software-driven business will be a critical driver of competitive advantage. Over 40% say it is already affecting new product and service development.¹



From sneaker company to data enabled athletic brand.



From book seller to insight driven delivery service, cloud servicer and entertainment hub.




From UK Grocer to global consumer retailer leveraging data and technology that reframes the shopper experience.



From appliance manufacturer to Industrial Internet provider with 10,000 software professionals.

¹"Global Study: The Battle for Competitive Advantage in the Application Economy", Oxford Economics and CA Technologies, June 2015



**CA is one of the
largest, independent
system software
companies in the
world that continues
to transform the face
of business.**

Since 1976, we've been a culture of innovation—half of our 11,600 person workforce is in development, creating better ways of managing, securing and deploying IT infrastructure.

CA Technologies: Proven expertise and staying-power

35+

YEARS MANAGING COMPLEX
IT ENVIRONMENTS

\$4.26

BILLION ANNUAL REVENUE
AND STRONG PROFIT

- Invests more than **\$1 billion** each year in designing and supporting software
- Holds more than 1,050 patents worldwide, with more than 950 patents pending
- CA technologies received a positive overall vendor rating from Gartner, Inc.¹

A marquee customer base²:

46 of 50

Fortune 50

20 of 20

Largest global banks

13 of 15

Largest financial services companies

8 of 10

Largest defense/aerospace companies

23 of 25

Largest U.S. Federal agencies³

9 of 10

Largest pharmaceutical companies

20 of 20

Largest insurance companies

10 of 10

Largest telecom companies

¹Gartner, Inc.; "Vendor Rating: CA Technologies"; David Cappuccio, et al; August 31, 2015. Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

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Dana.Boudreau@ca.com



Agile Development @ CA

Take the opportunity to influence our product development.
Help ensure that we deliver is what you need and want.



Influencing Our Roadmap

CA Communities Ideation

- Submit your ideas on communities.ca.com
- Vote & comment on ideas that are important to you
- CA Product Management reviews ideas and updates status as they move through the lifecycle
- “Currently Planned” idea status indicates inclusion in Agile Backlog or Product Roadmap

Customer Validation

- Register to participate in:
 - Monthly Reviews with Live Demos
 - Private - Members Only - Online Community
 - Pre-Release Onsite Testing and Support (Beta)
- How to register:
<https://validate.ca.com>

Ideas - communities.ca.com

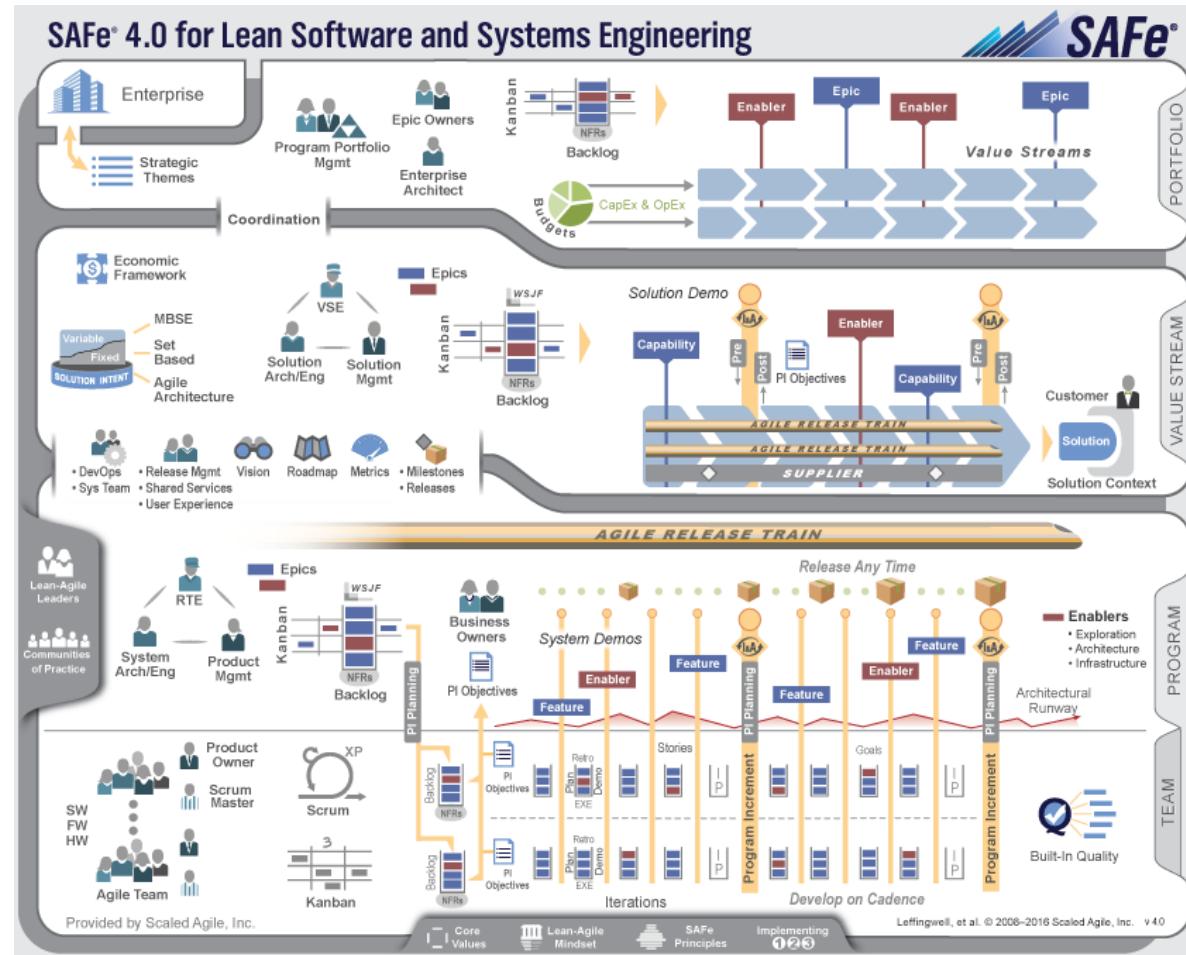
The screenshot shows a Windows Internet Explorer browser window displaying the CA Plex CA 2E community page. The address bar shows the URL: <https://communities.ca.com/community/ca-plex-ca-2e/content?filterID=contentstatus%5Bpublished%5D~objecttyp>. The page header includes the CA Technologies logo, navigation links (Products, Services, Support, REWRITE, Communities, Partners), and a search bar. The main content area is titled "CA Plex CA 2E" and features a "Following in 1 stream" button. Below the title, there are tabs for Overview, Content, People, Subcommunities, Reports, and Calendar. A sidebar on the left lists "Categories" with links to "CA 2E" and "CA Plex". The main content area displays "All Content (2416)" with various icons representing different content types. The "Ideas" icon, which is a lightbulb, is circled in red. Below the content list, there are filters for "All stages", a text input for "Type to filter by text", a "Filter by tag" button, and a "Sort by score" dropdown menu. The page also shows pagination controls for 1 and 2 items.

CA Uses SAFe and Agile to Develop Software

CA 2E Engineering is moving to use SAFe with SCRUM and Kanban to develop customer focused innovation

You are invited to be part of the process as part of our Customer Validation Process using www.validate.ca.com

www.scaledagileframework.com



CA 2E Releases Status

■ CA 2E 8.5:

- GA August 28, 2009
- EOS November 30, 2015

■ CA 2E 8.6:

- GA April 10, 2012
- EOS Announcement coming when planning for Release 8.7.1 is complete
- Please upgrade to Release 8.7 to prepare your company for Release 8.7.1

■ CA 2E 8.7:

- GA October 29, 2014
- EOS Not Announced



CA 2E Previous Releases PTF Plans

- CA 2E 8.6:
 - PTF Rollup Release
 - Team is working on a single roll up of all published PTFs
 - Likely last updates to release 8.6
- CA 2E 8.7:
 - PTF Rollup Release
 - Team is working on a single roll up of all published PTFs



CA 2E 8.7 Release Highlights

Features 1 of 3

- Action Diagram Call Prompt Using an External name
 - Allow SQL Record Level Access
 - Allow RLA Access over DDL Database
 - Allow SQL/DDL Generation without hard-coded schema name
 - Allow LVLCHK(*YES) for SQL/DDL indexes having RCDFMT keyword
- Command Key Processing (Mouse-click and Key-press)
- Device User Source Substitution Variables
 - Meaningful Names for SQL/DDL



CA 2E 8.7 Release Highlights


Features 2 of 3

- Refresh Action Diagram Statements
- Select/Omit in DDL Index
- Suppress Display of NLL Parameters
- Trigger Error Processing if no Control Data
- YCPYMDLOBJ New Override Target Model Locks Parameter
- YCVTSPLF Flexibility
- Option to Generate RLA against DDL
- F7=Auxiliaries in the DDL Implementation



CA 2E 8.7 Release Highlights

Features 3 of 3

- Support CM Promotion of DDL Objects (Not Switched from DDS)
- Support CM promotion of DDL objects (DDS to DDL Conversion)
- > 76 fixes 
- CA 2E 8.7 provides support for customers to more easily transition from DDS to DDL type databases, to reap the value that IBM continues to add to SQL on the IBM i platform.

DDS ➔ ➔ **DDL**

Roadmap: CA 2E

| | Delivered | Planned | Under Consideration |
|---|---|---|--|
| Product/ Releases | CA 2E 8.7 | CA 2E 8.7.1 | CA 2E 8.7.2 |
| Marquee Features/ Business Value | <ul style="list-style-type: none"> ▪ Simplify conversion from DDS to DDL database by allowing you to continue to use RLA functions without regenerating and recompiling them ▪ Simplify deployment and Change Management by allowing generated database objects to be compiled into any desired SQL collection or library as specified in the YSQLLIB model value ▪ Ensure that indexes are protected from data corruption by creating them with LVLCHK(*YES) when the RCDFMT keyword is used ▪ Change Management support for DDL objects <p>Currently GA</p> | <ul style="list-style-type: none"> ▪ IBM i OS 7.3 Certification including all core components ▪ Improve SQL Support by adding enhanced support for SQL <ul style="list-style-type: none"> ▪ Optimize for “N” Rows ▪ Partition Support ▪ Select by Column Name ▪ Custom Views ▪ Data access by file type - RLA for DDS and SQL for DDL/SQL files ▪ Make it easier to consume web services by having meaningful names in WSDL ▪ Make CA 2E Easier to Use by adding native string handling routines ▪ Architectural Runway for REST API Enablement | <ul style="list-style-type: none"> ▪ Customer Enhancements ▪ Improved Performance ▪ Improved API Support ▪ REST Enablement |

Timeline as of July 2016

Influencing Our Roadmap – As a reminder

CA Communities Ideation

- Submit your ideas on www.communities.ca.com
- CA Plex and CA 2E Community
- Use Ideas and Tag CA 2E
- Vote & comment on ideas that are important to you
- CA Product Management reviews ideas and updates status as they move through the lifecycle
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 - Pre-Release Onsite Testing and Support
 - www.validate.ca.com select the CA 2E Group



Steve Solomon

Sr. Principal Product Manager

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in



cm FIRST

Rethink Modernization

Transforming or Modernizing Your CA 2E Assets in 2016

– What the User Community is Considering and Doing

John Rhodes— CTO, Managing Director, CM First Group

July 2016

What is the future for Your 2E Apps?

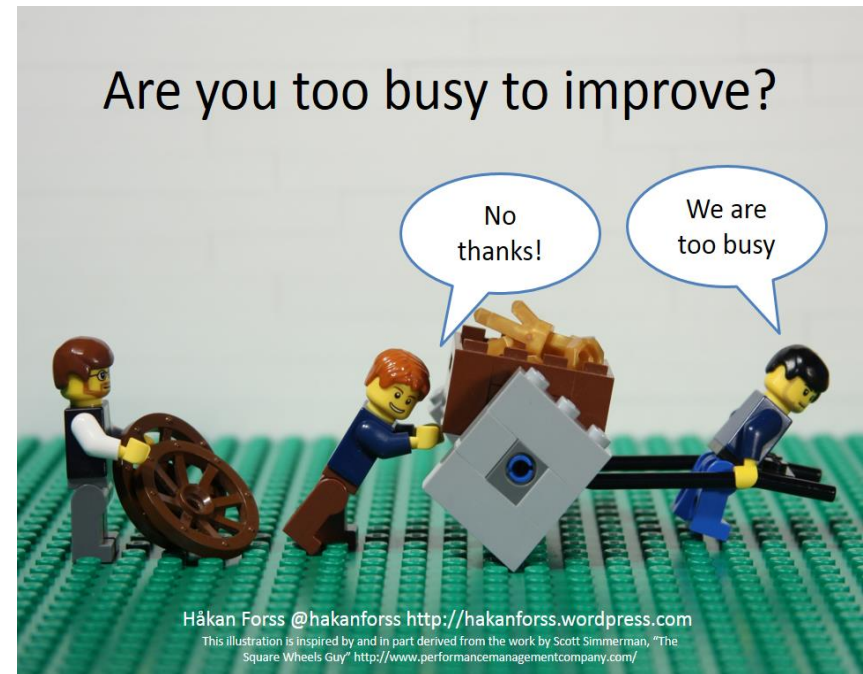
- Rewrite / Replace
 - Large capital investment
 - Fact: most rewrite projects fail
- Status Quo
 - You know what happens here
- Or...

Improve what you have already invested in
via incremental improvements or migration



Improvement in Place Strategies

- New Training Courseware Partnership with CA
- SQL Migration / Web Option / Services
- DevOps – CA 2E CM / Implementer / MatchPoint
- Team Augmentation



What we hear from CA 2E Replatforming Customers

- You have 1000s screens and functions to migrate
- Your system works well but future holds:
 - Replatforming
 - Responsive UX
 - APIs and more
- Future should follow current tech standards
- Budgets are tight and management doesn't like risk
- Your developers must be able to understand and maintain the modernized code base

Consider A Long Term Solution CM M3

Extend CA 2E Economic Life

Take the legacy software
and automatically
transform the old code
into a modern new
solution



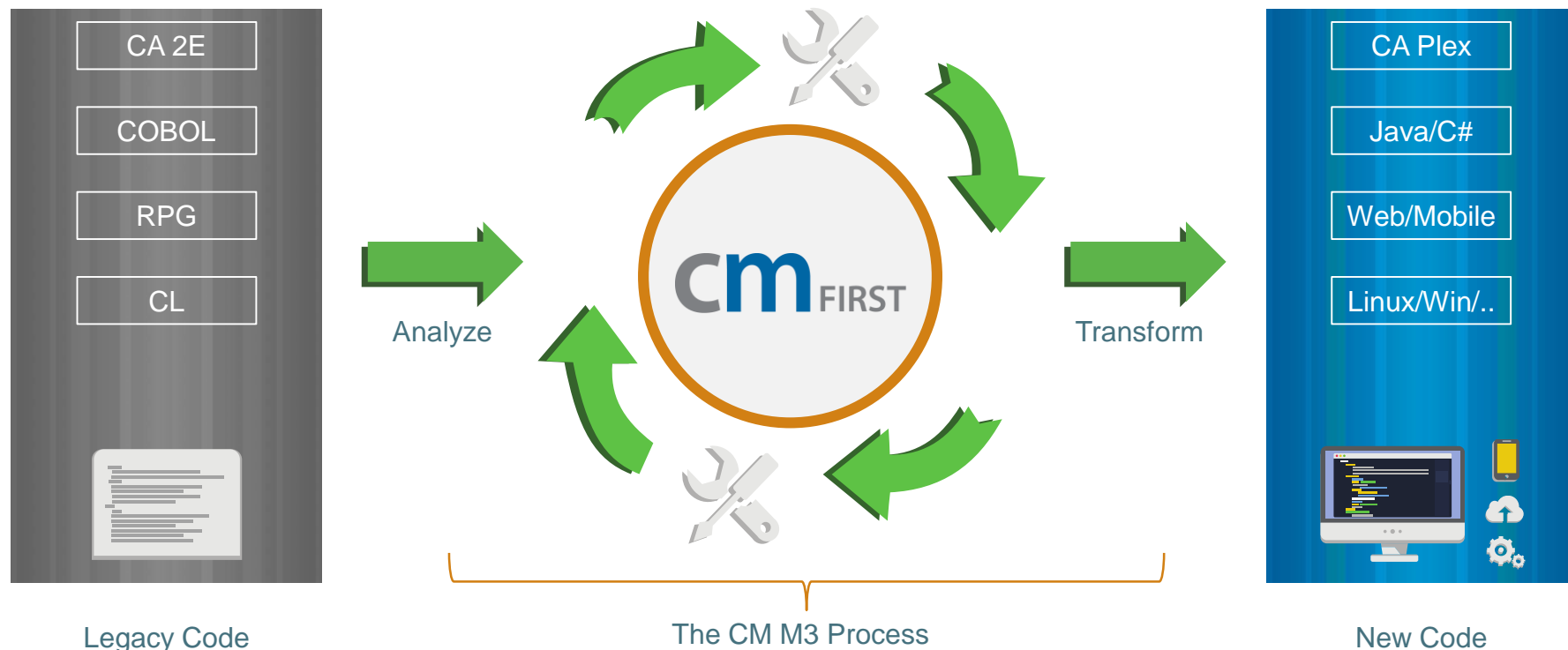
Effective CA 2E modernization requires:

1. Automation approaching 100% of supported functions
2. Preservation of Model Environment Productivity
3. A Maintainable and Understandable Result
4. Guaranteed, Predictable Costs / Timelines
5. Responsive Web applications and API's out of the box



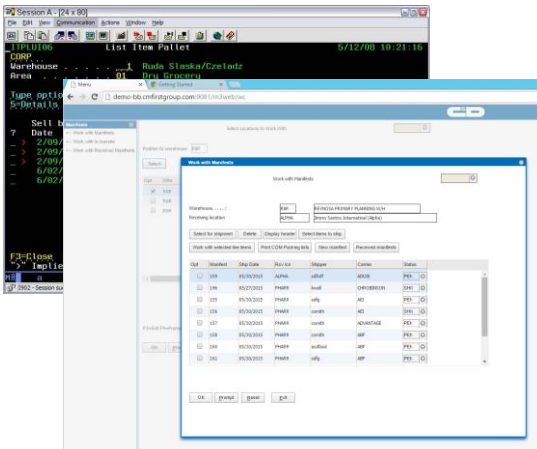
- **Goal: A modern, refactorable system with reduced technical debt.**

How the Modernization Process Works



Fixed cost, defined time frame (weeks)

Transform to Rich, Standards Based Apps



- ✧ Modern Databases
- ✧ HTML5 Responsive UX
- ✧ API Interfaces
- ✧ Inheritance
- ✧ Eclipse/Visual Studio
- ✧ Versioning /
- Customization Control
- ✧ Modern Deployment
- Stack/Cloud/SaaS
- ✧ Developer Productivity



A New User Experience that's Rich Web and HTML 5 Runs on All Browsers, and/or as a Device Native Hybrid App

cm FIRST
Rethink Modernization

Products Services Company Blogs


Accounting Staff Settings Cash Batches Person

Maintain Persons New

Work with Person Entries

Apply New Delete

| Person First | Person Last |
|--------------|-------------|
| Paul | Simon |
| Bob | Smith |
| Jones | Bill |
| Mary | Smith |
| Larry | Lewis |

Person First: Jones
Person Middle: B
Person Last: Bill
Person Suffix: Jr.
Person Language: ENG
Person Tax ID: 322121112
Sex: Male
Birth Date: 10/06/64
Tobacco Use: Non-Smoker
Photo: 

Application: Word Online

Download Save to OneDrive Print Find

Your Company Name
INVOICE / 01-01-2013

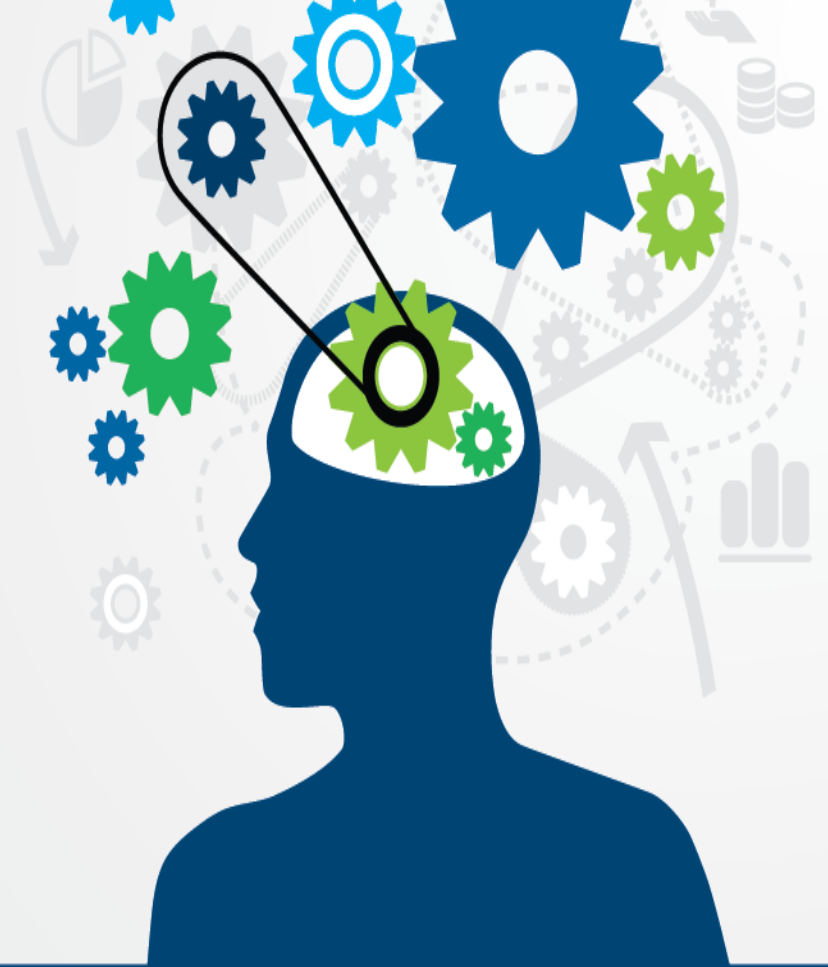
Client Name
Address

BALANCE DUE
Upon Receipt
\$0.00

City Price Per Total

HELP IMPROVE OFFICE 75%

Map Satellite
S 1st St
Ann and Roy Butler Hike and Bike Trail
Ann and Roy Butler Hike and Bike Trail
Google
Map data ©2016 Google Terms of Use Report a map error



A Live Modernization Demo

Database Relations and Schema

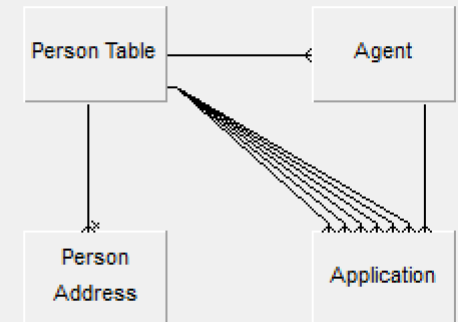
```

*PGMR  CMINSMDL2          Op: JDRHODES  JDR          7/26/16  8:45:48
EDIT DATABASE RELATIONS          CMINSMDL2
=>
? Typ Object              Rel lvl:  Relation  Seq Typ Referenced object
---
FIL Application           Has        131 FLD Nicotene Other Last used
FIL Application           Has        132 FLD Nicotene amount/freq
FIL Application           Has        145 FLD Billing Frequency
FIL Application           Has        150 FLD Billing Method
FIL Application           Has        155 FLD Cash with Application Amt
FIL Application           Has        160 FLD Bank Routing Number
FIL Application           Has        165 FLD Bank Account Number
FIL Application           Refers to   200 FIL Product
FIL Application           Refers to   201 FIL Person Table
      For: Beneficiary 1          Sharing: *ALL
FIL Application           Refers to   201 FIL Person Table
      For: Beneficiary 2          Sharing: *ALL
FIL Application           Refers to   201 FIL Person Table
      For: Beneficiary 3          Sharing: *ALL
FIL Application           Refers to   201 FIL Person Table
      For: Insured                Sharing: *ALL
More...

Z(n)=Details  F=Functions  E(n)=Entries  S(n)=Select  F23=More options
F3=Exit  F5=Reload  F6=Hide/Show  F7=Fields  F17=Services

```

Person ERD



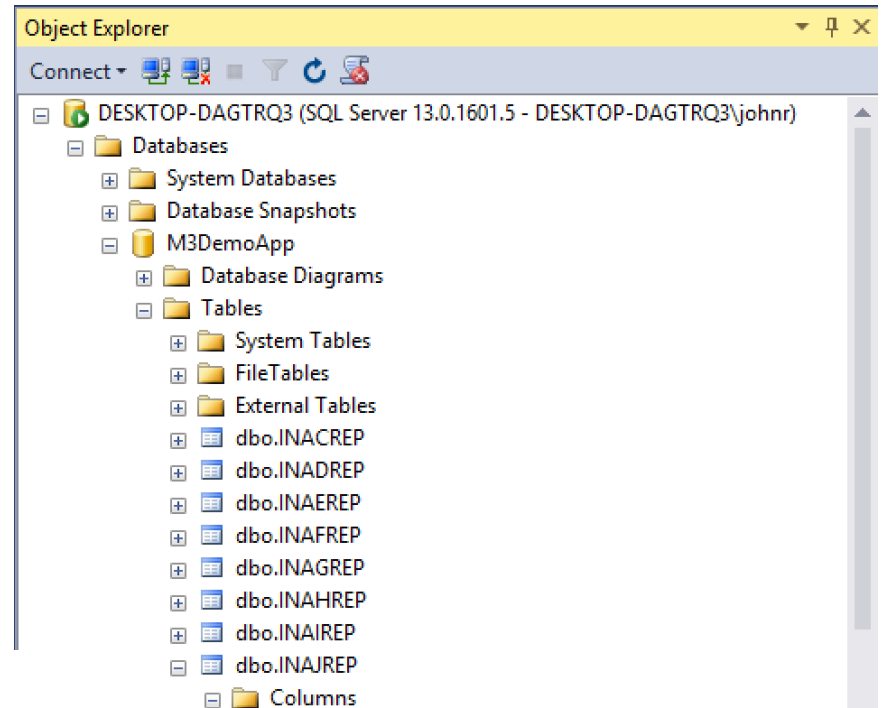
| Application - Entity attributes | | | |
|---------------------------------|----------------|----------------|-----------------------|
| Relationship | Inheritance | Attribute type | Attribute field |
| has Changed User | is a Audit Sta | Data | Changed User |
| has Changed Time | is a Audit Sta | Data | Changed Time Stamp |
| has Created User | is a Audit Sta | Data | Created User |
| has Created Time St | is a Audit Sta | Data | Created Time Stamp |
| known by Application | | Primary Key | Application ID |
| has Application Dat | | Data | Application Date |
| has Application Stat | | Data | Application Status |
| has Applied for Units | | Data | Applied for Units |
| has Drivers License | | Data | Drivers License |
| has Drivers License | | Data | Drivers License Stat |
| has Marital Status | | Data | Marital Status |
| has Birth Place | | Data | Birth Place |
| has Occupation | | Data | Occupation |
| has Length in Occu | | Data | Length in Occupation |
| has Licence Revok | | Data | Licence Revoked 5 |
| has Alc\Drug Convi | | Data | Alc\Drug Convict 5 |
| has Member armed | | Data | Member armed servi |
| has Pilot License? | | Data | Pilot License? |
| has Foreign travel n | | Data | Foreign travel next y |
| has Replacement P | | Data | Replacement Policy |
| has Replacement In | | Data | Replacement Info |
| has Employers Nam | | Data | Employers Name |
| has Time with Emplo | | Data | Time with Employer |
| has Ever used Toba | | Data | Ever used Tobacco |
| has Cigarettes last u | | Data | Cigarettes last used |
| has Cigarette Amou | | Data | Cigarette Amount\Fr |
| has Cigare last used | | Data | Cigare last used |

Schema/Data Transformed (SQL Server)

```

Columns . . . : 1 71      Edit      CMINGEN2/QDDSSRC      INAJREP
SEU=>
FMT A* . . . . . A* 1 . . . . . 2 . . . . . 3 . . . . . 4 . . . . . 5 . . . . . 6 . . . . . 7
0009.00      H* Copyright      : CMINSMDL2
0010.00      H*
0011.00      A=====
0012.00      M* Maintenance      :
0013.00      A=====
0014.00      A      R FAJREAN      TEXT('Application')
0015.00      A-----
0016.00      A      AJA0CD      20      TEXT('Application ID')
0017.00      A      COLHDG('Application' +
0018.00      A      'ID')
0019.00      A      AJACDX      8 0      TEXT('Application Date')
0020.00      A      COLHDG('Application' +
0021.00      A      'Date')
0022.00      A      EDTWRD(' / / ')
0023.00      A      AJALST      1      TEXT('Application Status')
0024.00      A      COLHDG('Application' +
0025.00      A      'Status')

F3=Exit  F4=Prompt  F5=Refresh  F9=Retrieve  F10=Cursor  F11=Toggle
F16=Repeat find  F17=Repeat change  F24=More keys
    
```



```

CREATE TABLE [dbo].[INAJREP](
    [AJA0CD] [char](20) NOT NULL,
    [AJACDX] [numeric](8, 0),
    [AJALST] [char](1) NULL,
    [AJAEQT] [money] NULL,
    [AJATCD] [char](20) NULL,
    [AJAUCD] [char](2) NULL,
    [AJARST] [char](1) NULL,
    [AJAVCD] [char](30) NULL,
    [AJAWCD] [char](30) NULL,
    [AJAIQT] [money] NULL,
    [AJASST] [char](1) NULL,
    [AJATST] [char](1) NULL,
    [AJAUST] [char](1) NULL,
    [AJAVST] [char](1) NULL,
    [AJAWST] [char](1) NULL,
    [AJAXST] [char](1) NULL,
)
    
```

| AJA0CD | AJACDX | AJALST | AJAEQT | AJATCD | AJAUCD | AJARST | AJAVCD |
|---------|----------|--------|---------|--------|--------|--------|--------|
| 100 | 20150101 | A | 11.0000 | 11111 | AZ | M | USA |
| AP001 | 20150101 | P | 10.0000 | 11221 | A | M | USA |
| AP002 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| AP003 | 20150101 | P | 10.0000 | 11221 | A | M | USA |
| IVY01 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY02 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY06 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY07 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY09 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY10 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY11 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY15 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY33 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY45 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| IVY98 | 20150101 | P | 10.0000 | 11221 | A | M | usa |
| WSDL120 | 20150101 | P | 10.0000 | 11221 | A | M | USA |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

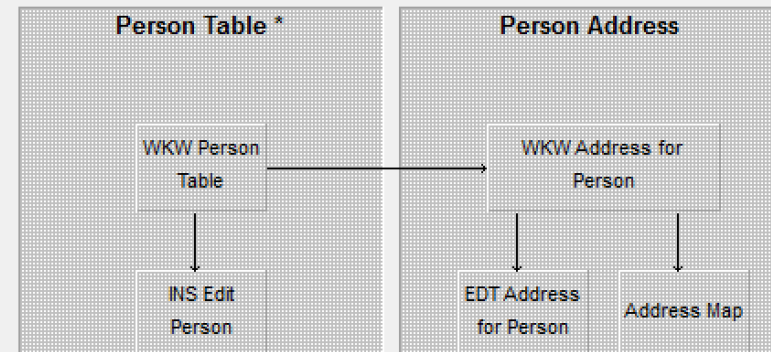
Code Transformed, RPG/COBOL to Java

```

EDIT ACTION DIAGRAM      Edit      CMINSMDL2  Person Table
FIND=>                    INS WKW Person Table
I(C,I,S)F=Insert construct      I(X,O)F=Insert alternate case
I(A,E,Q,*,+,-,=,=A)F=Insert action  IMF=Insert message
> USER: Process subfile record (Pre-confirm)
--
--CASE
--RCD.*SFLSEL is *Select
--PAR.Person ID = RCD.Person ID
--Exit program - return code PGM.*Return code
--RCD.*SFLSEL is *Edit
--INS Edit Person - Person Table *
--RCD.*SFLSEL is Address
--WKW Address for Person - Person Address *
--ENDCASE
--
F3=Prev block  F5=User points  F6=Cancel pending moves  F23=More options
F7=Find        F8=Bookmark     F9=Parameters          F24=More keys

```

Person Function Calls



Post Point USER: Process subfile record (Pre-confirm)

Case

```

When RCD<@SFLSEL> IS <State: @SFLSEL.*Select>
  Set PAR<Person ID> = RCD<Person ID>
  Set PGM<@Return code> = PGM<@Return code>
  Go Sub ZYEXPG

When RCD<@SFLSEL> IS <State: @SFLSEL.S_#Edir>
  Call Person Table.INS Edit Person

When RCD<@SFLSEL> IS <State: @SFLSEL.S_#Address1>
  Call Person Address WKW Address for Person

```

```

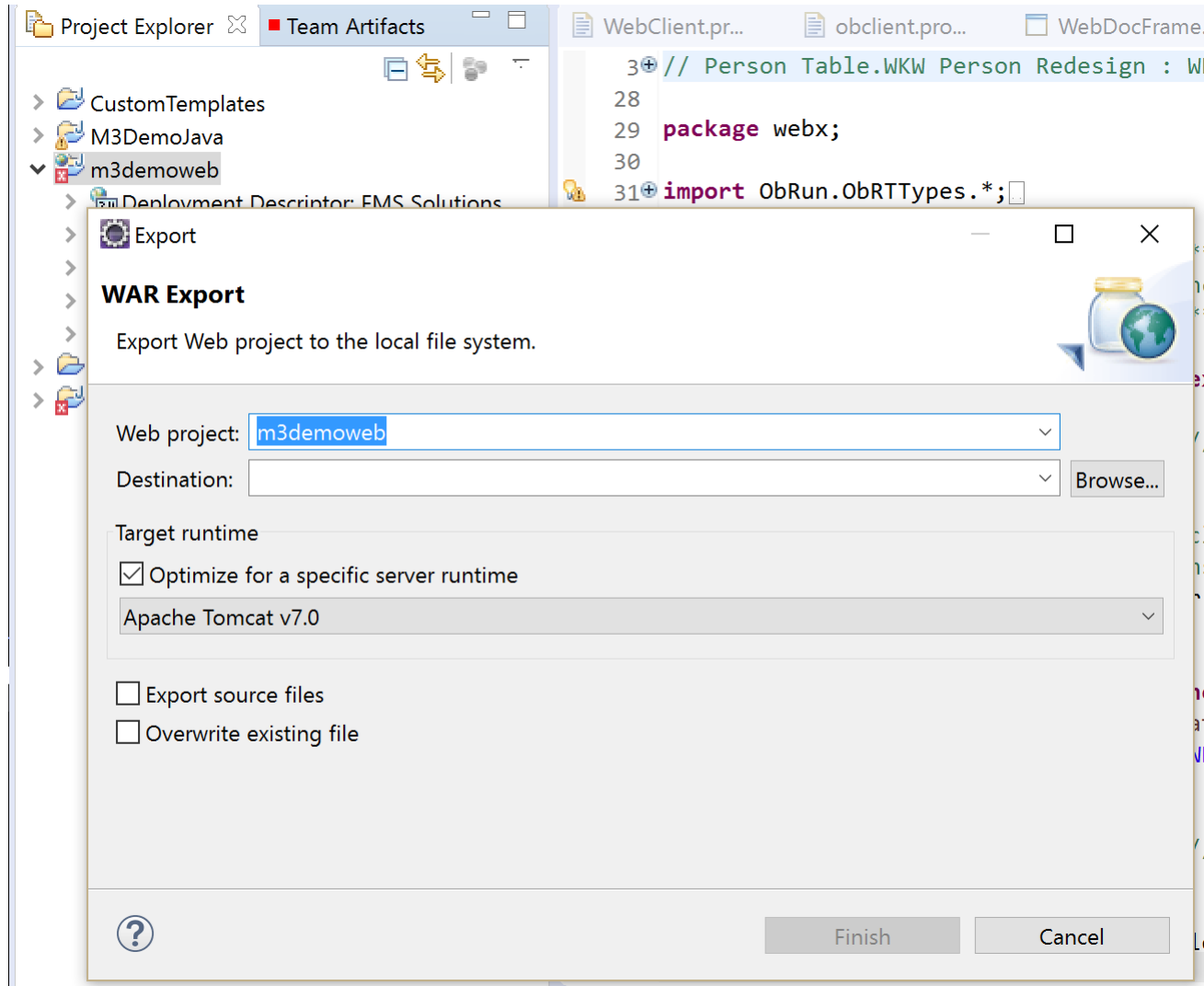
// *****
// Person Table.WKW Person Redesign Function Class
// *****

public final class WKWPersonRed_ObFnc extends ObFunction
{
    //////////////////////////////////////
    // Construction Methods:

    //Default constructor - called by class loader
    //when class gets loaded and 'newInstance()' gets called
    public WKWPersonRed_ObFnc(ObCallMgr obcallmgr)
    {

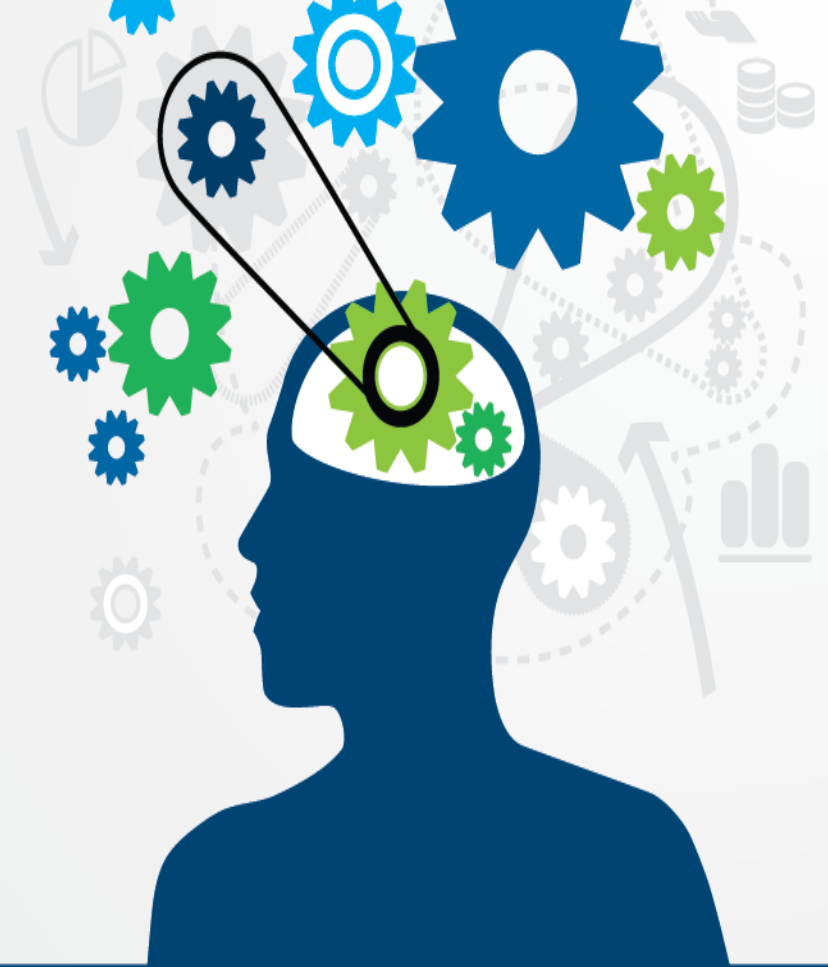
```

Running on Any Platform as Java Web App



LEARN MORE @

<http://cmfirstgroup.com>





Now,
How about some
Questions for
Steve and John
from today's
Audience?