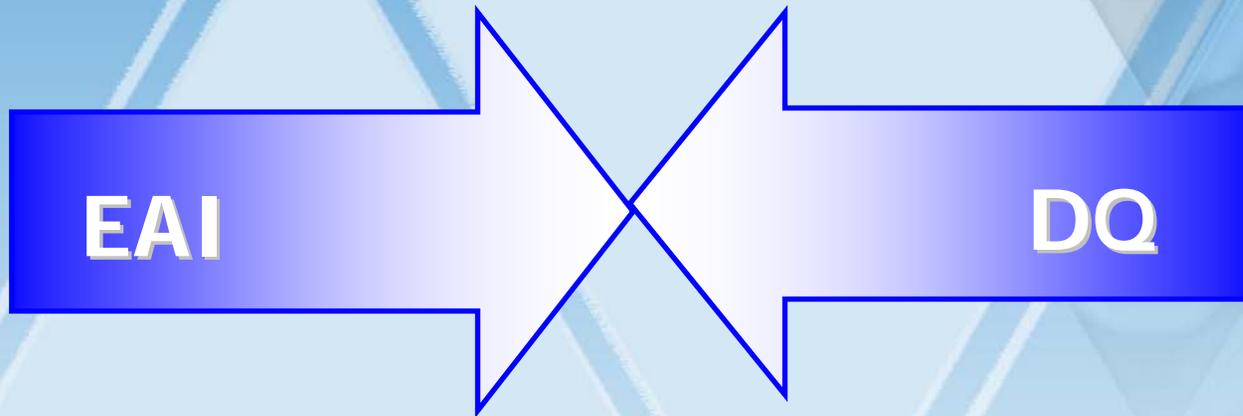


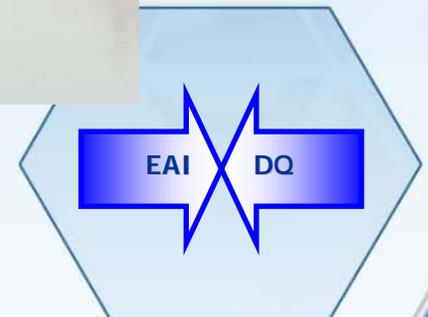
# Data Quality & Enterprise Application Integration



# *Data Quality & EAI*



Alex Kerezy  
Data Architect



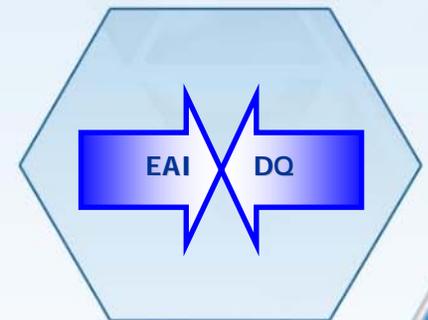
# *Overview Synopsis*

Understanding of the EAI and how data quality is foundational for its success.

Discuss where data quality fits in and suggest implementation guidelines to help assure success.

Learn about Enterprise Application Integration terms, related concepts like messaging and semantics, what it is, what isn't, why we need it or what benefits it brings.

I am not discussing specific products, technical languages, and detailed implementation



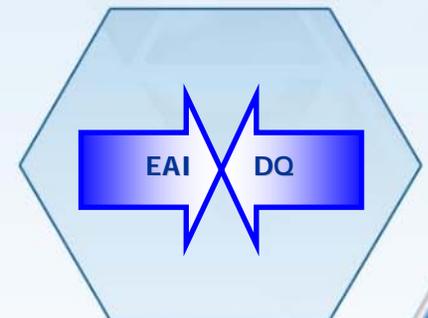
# ***Presentation Outline***

Enterprise Application Integration

Common Semantic

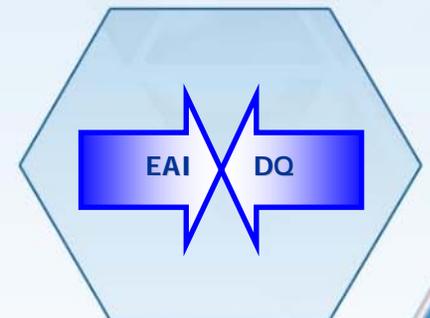
Common Data Quality Issues

Recommendations



***EAI***

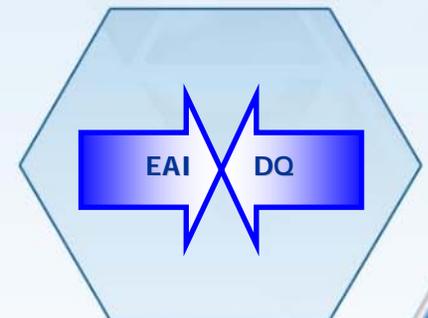
# Enterprise Application Integration



# Defining EAI

## *What is it? – Standard Definitions*

- The plans, methods, and tools aimed at modernizing, consolidating, and coordinating the computer applications in an enterprise.
- The resources involved in the seamless integration of two or more enterprise systems allowing them to operate as one.
- The process by which different computer applications are designed to work together.

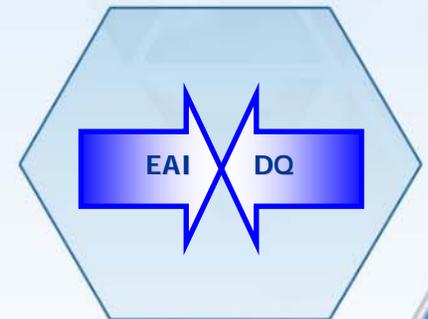


# Defining EAI

## *What is implied*

- Multiple Systems or Components
- Systems have to 'work' together  
.....therefore.....
- Systems have to 'talk' to each other

*Let's be honest....More or less, our systems  
have worked together for years*



# Defining EAI

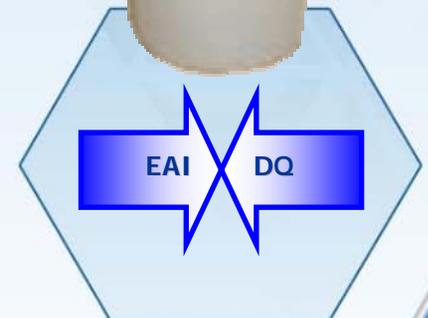
## *What is it really*

An environment where each system operates in such a manner that it acts as a self-contained ('stand alone') replaceable component, that provides specific business services that work with but are unaware of the other systems around it.

Almost like the organization of a Starbucks Environment –

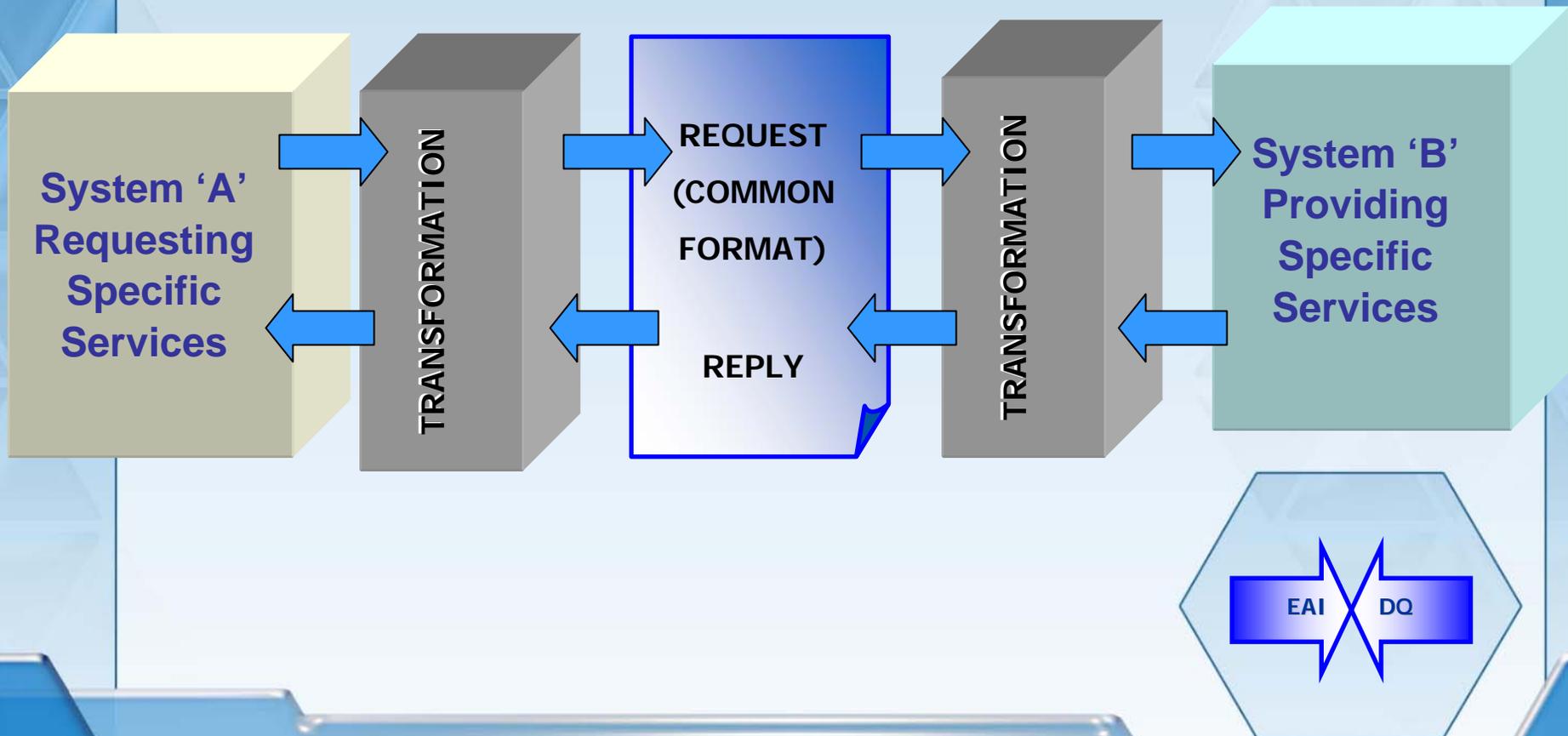
- One system takes orders
- One system produces product
- One system stocks supplies

They communicate with this special language. I can replace the person taking orders with someone else without disrupting the overall environment.



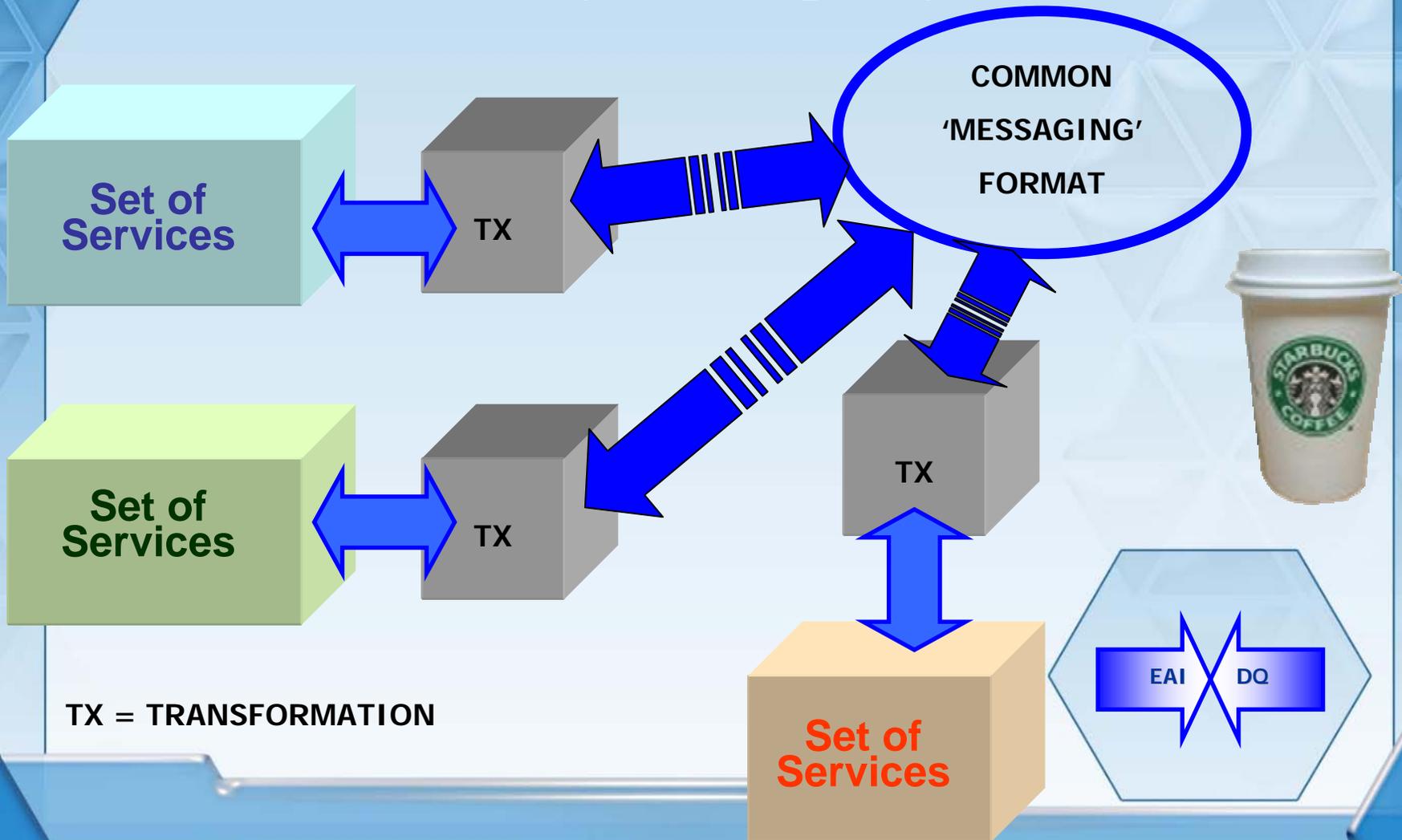
# Defining EAI

*What is it really*



# Defining EAI

*What is it really – Multiple Systems*



# Defining EAI

## *What we're focusing on*

- The business processes or services being defined.
- The data being passed around or the 'communication payload'.

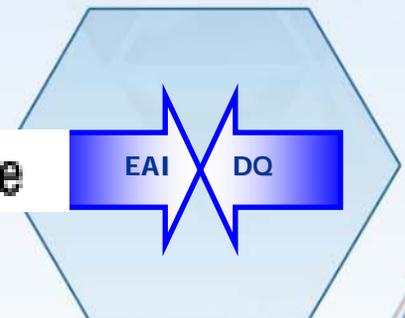
## *What we're not focusing on*

- The messaging software, translation tools, protocols etc.

- TIBCO, BEA, WebSphere



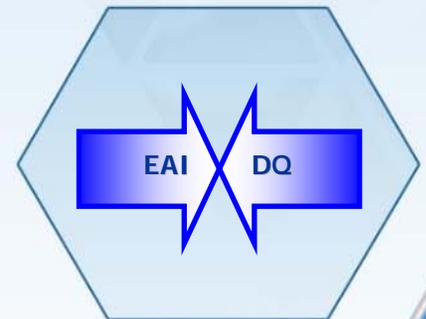
WebSphere software



# Defining EAI

## *What it is not*

- A way to consolidate or merge two systems
- A silver bullet 
- Cheap



# Implementing EAI

*How do you do this?*

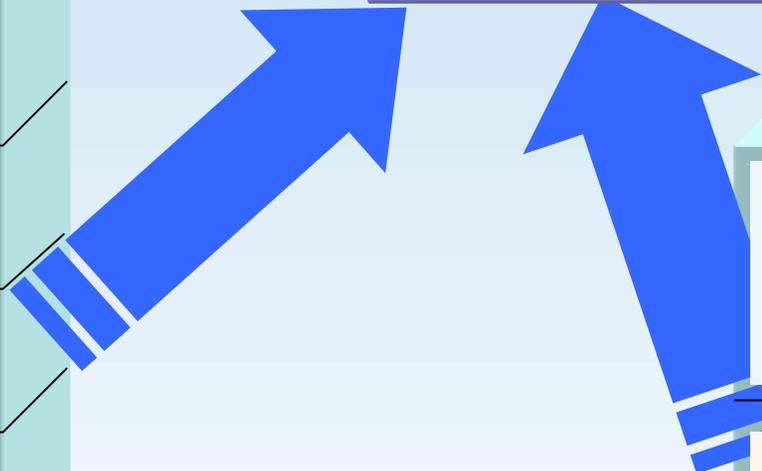
*Policy Admin System*



**Marketing System**



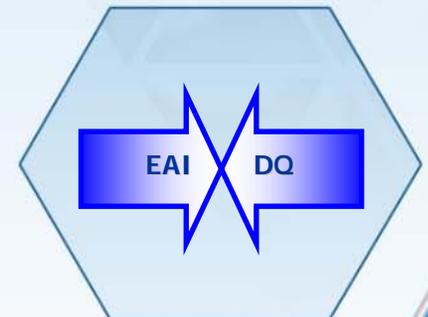
*Agent System*



# *Valuating EAI*

## *What's the value?*

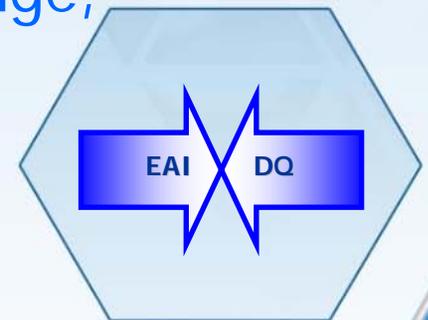
- I can replace one of the systems or components without disrupting the others.
- Changes can be less costly and faster because they're not embedded in monolithic monster systems that provides multiple business services.
- New systems, through acquisition or purchase can be integrated faster.



# Defining EAI

*By the way...*

- The idea of separating business processes from specific consumers of the service is called uncoupling or decoupling.
- Business processing that is tightly bound to, or interdependent of specific consumers is 'coupled'.
- The only sure thing in business is change, and uncoupling makes changing systems easier and faster.

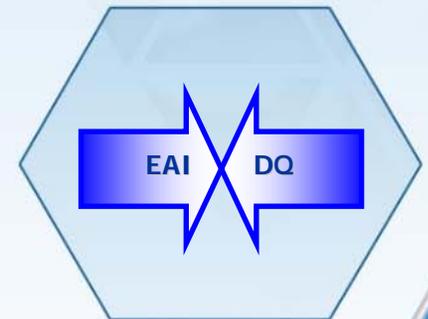


# ***Bonus Slide***

*By the way...*

**Q:** From a general design perspective, what is the best insulator or best way to assure a system can easily adapt to change?

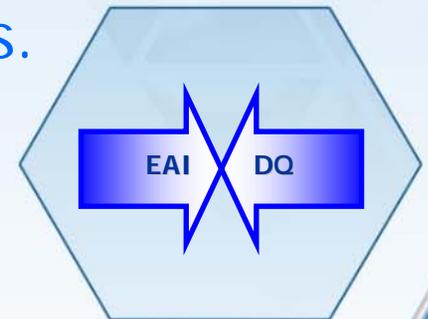
**A:** A high quality or highly normalized data design.



# *Valuating EAI*

## *What's the value? – Side Products*

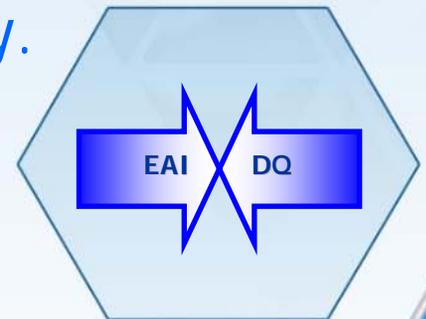
- Help your business clearly define its business processes.
- Lets you see how much money you're spending maintain duplicate functionality.
- Foster the development and/or growth of a central organization to manage shared artifacts.



# *Valuating EAI*

## *Why your company is not there*

- Over time, we burden systems with functionality that extends its intended business purpose.
- Cultural resistance to strict adherence to standards.
- Legacy systems that communicate usually do so in a very customized, resource intensive way.

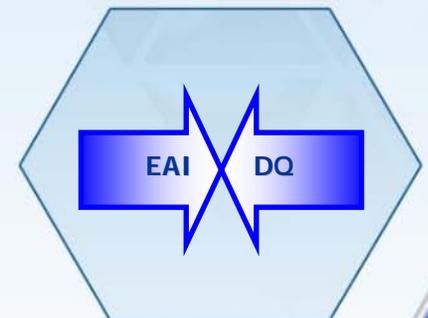


# Bonus Slide

*By the way...*

**Q:** If EAI and Services are the state of the art software or application design, what should an 'idea' or 'goal state' accounting package look like?

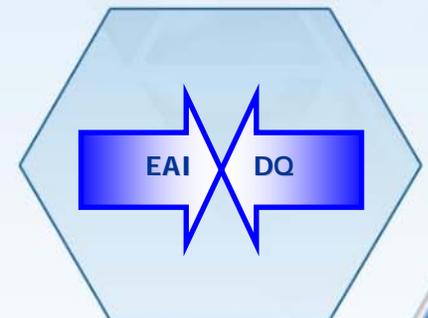
**A:** It should only perform accounting functions, it should NOT provide services to manage people, it should NOT have services to manage products or services.



# *EAI*

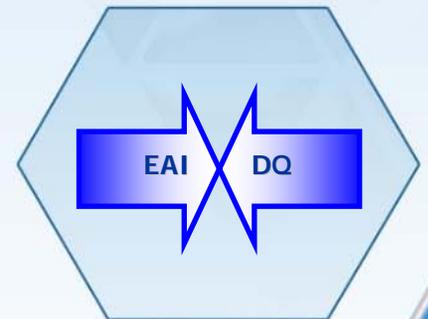
## *EAI*

- Definitions and Implications
- Value Proposition
- Examples



# *Semantics*

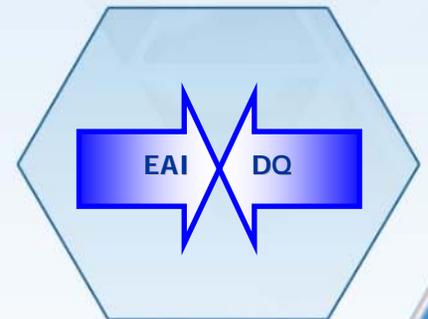
Semantics



# ***Defining Semantics***

## *What is it? – Standard Definitions*

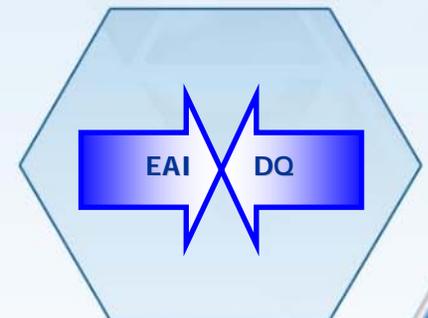
- The study of meanings (of words) [Merriam-Webster].
- The study of meanings in a language [Cambridge].
- A vocabulary that encompasses meaning and context



# Defining Semantics

## *What is it? – Standard Definitions*

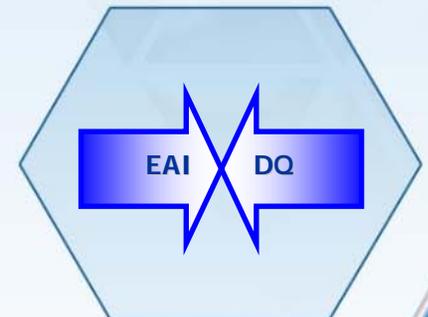
- An agreed upon language within an EAI environment that will be used by systems or components.
- A documented definition that a system or component adheres to in order to receive requests for services and/or provide responses or services.
- An agreed upon way to communicate your business services.



# Defining Semantics

## *What is it? – Standard Definitions*

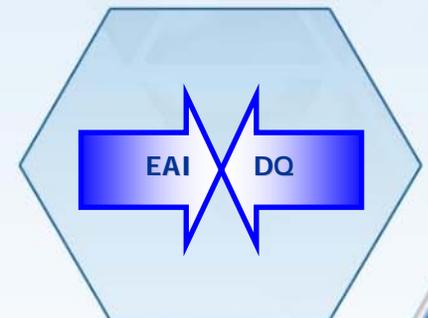
- An agreed upon way to do business
- Venti  
half-caramel,  
half irish cream,  
extra shot,  
nonfat  
latte



# Defining Semantics

## *What is it? – Standard Definitions*

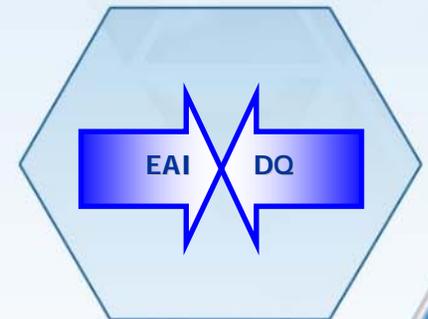
- A physical implementation, since literal computer systems speak or use this language.
- It is paramount for systems to provide services.
- It is often the **bad piece of track** that derails many EAI efforts.



# *Defining Semantics*

## *What is implied*

- That there is an 'agreed' upon and shared language.
- Systems or components use this language to communicate to each other.
- That systems or components who don't speak this language will need a translator or translation.

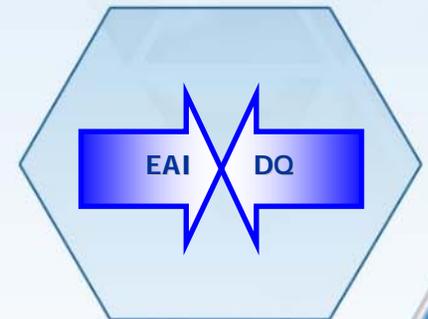


# Defining Semantics

## *What is it really*

- Part of the documentation of a contractual business service(s) which includes the information required to perform the service, and the results of the service.
- This is specific documentation on how you do business.
- Venti half-caramel, half irish cream, extra shot, nonfat latte

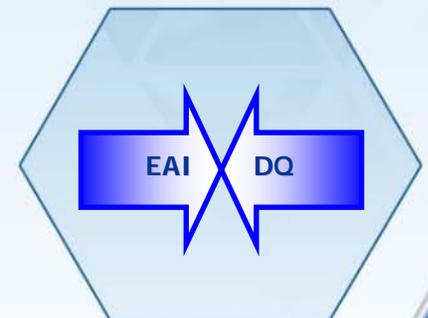
*I will make the drink for the customer, if you tell me what to make in our common language. When I am done, I will place the drink on the serving tray and call out drink for the customer.*



# ***Defining Semantics***

## *What it is not*

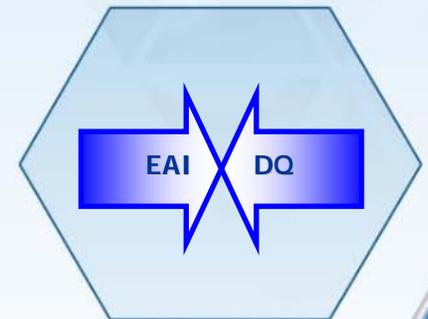
- A common business vocabulary.
- “Order entry calls billing”
- Different things to different people (or systems).
- It is not necessarily a ‘logical’ language or model, or set of terms.
- Anything to anyone.



# Valuating Semantics

## *What's the value?*

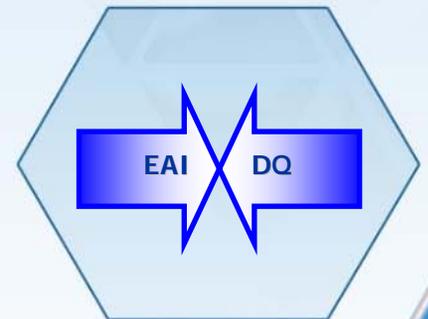
- Some other system or component can use the service if they speak the language (and they have access).
- It forces you to agree upon how you do business.
- It forces you to reconcile legacy data into an agreed upon format that is bigger than one system.  
(It's not "Billing's way" or "Inventory's way" or "Order Management's way", etc.)



# ***Semantics***

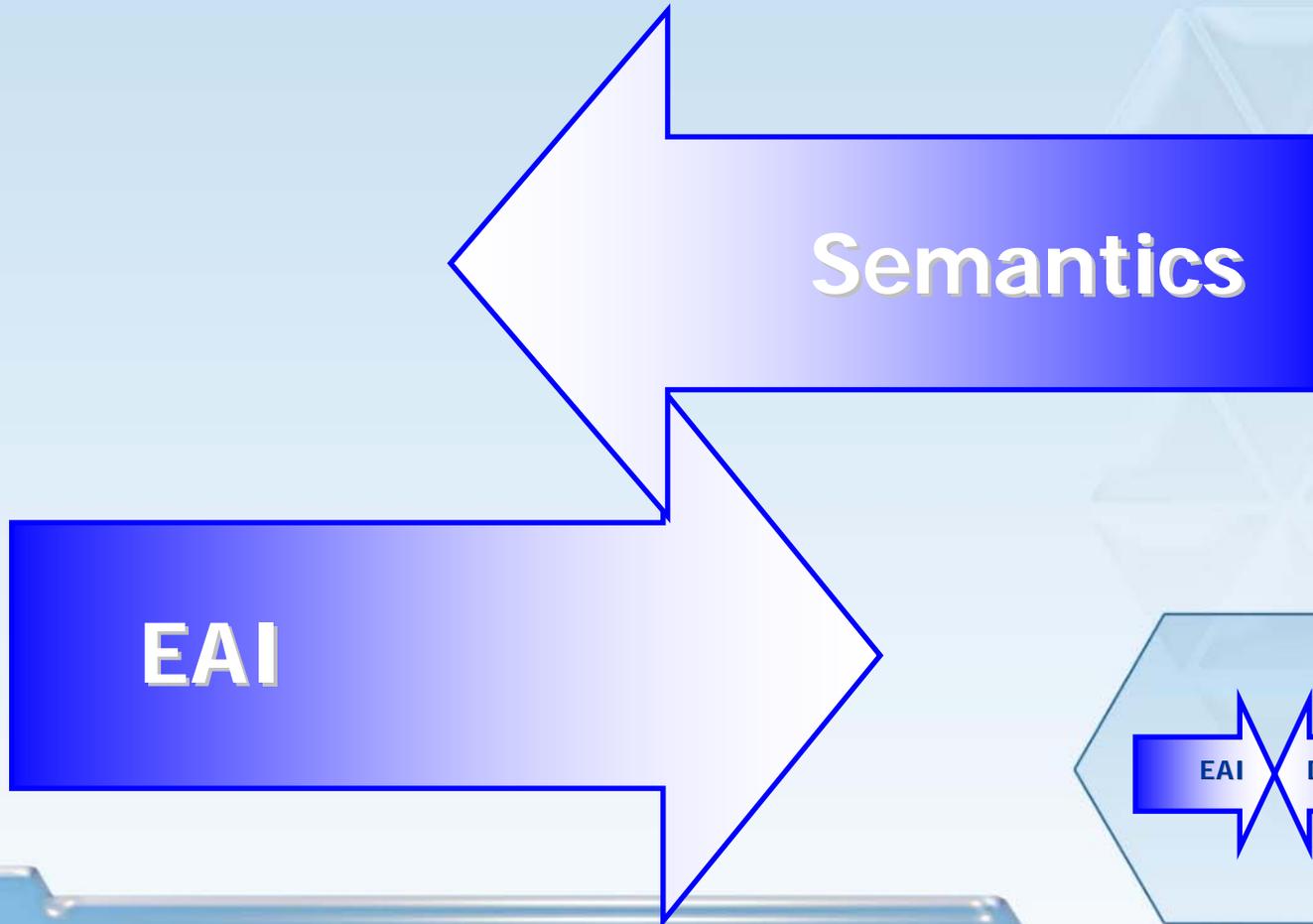
## *Semantics*

- Definitions and Implications
- What it isn't
- Value Proposition



# *Data Quality*

Data Quality

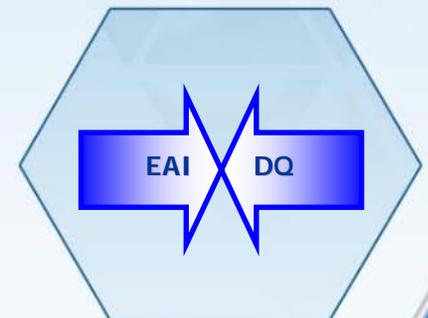


# Defining DQ

*What is it*

*Look I only have an hour.....*

- Key Quality Issues with EAI and Semantics
- Guidelines to make EAI a success



# ***DQ in EAI***

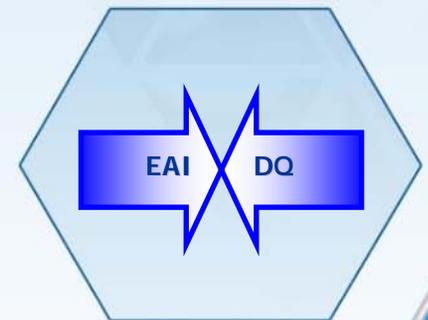
## ***Key data quality issues with EAI?***

- It doesn't address ongoing system design and development.

***Define 5  
Legacy  
data  
elements to a  
common  
format***



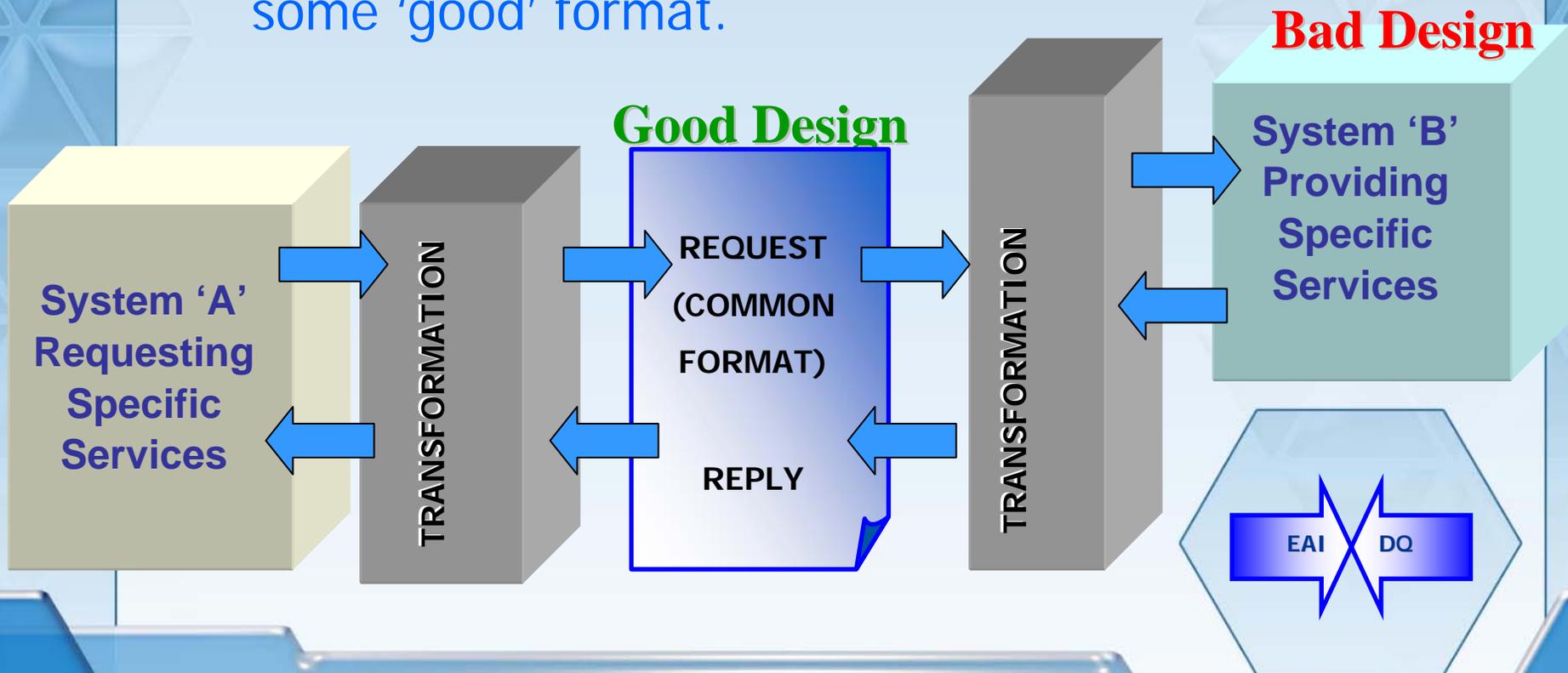
***Add 10 new  
poorly designed  
Legacy data  
elements in  
new development***



# DQ in EAI

## *Key data quality issues with EAI?*

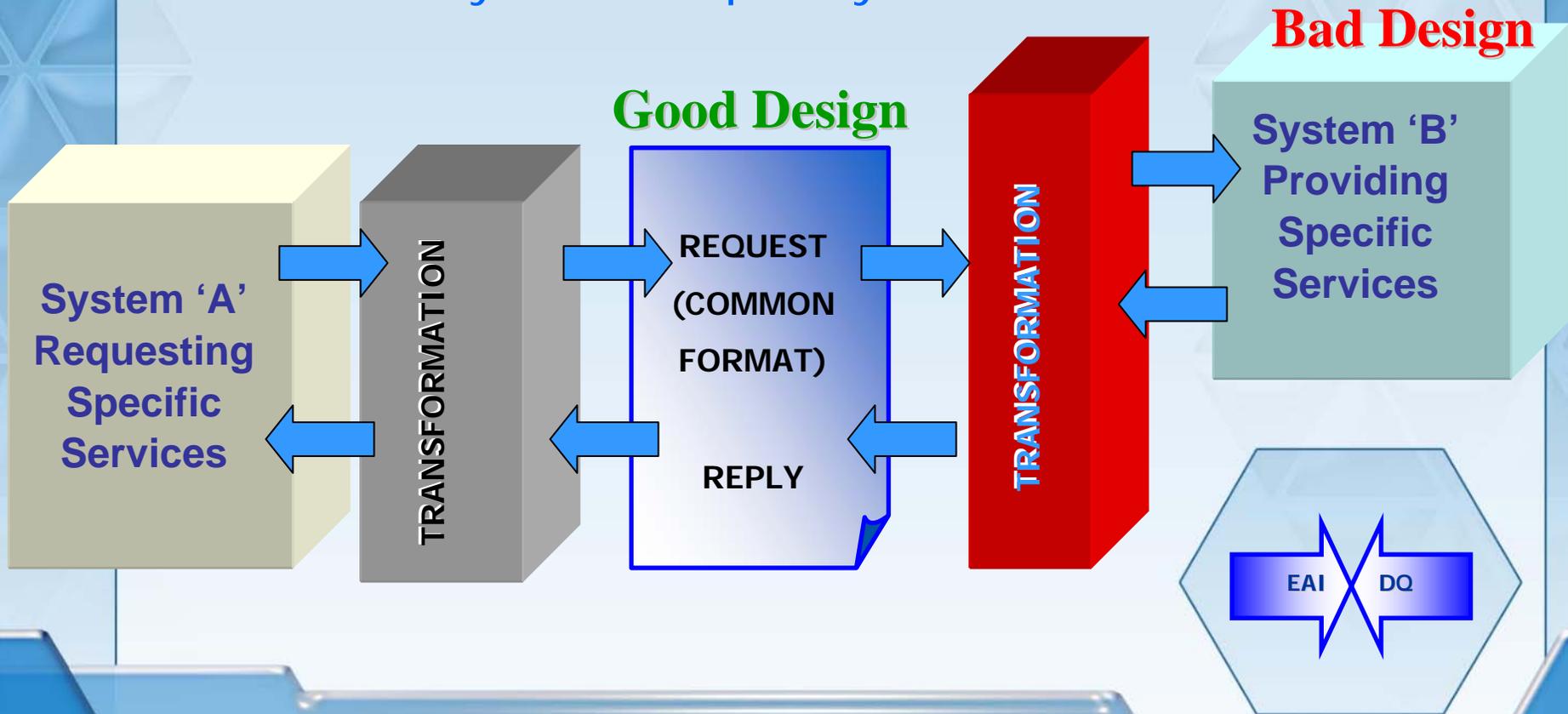
- It does not set out to change the root cause of the problem. It usually translates 'bad data' into some 'good' format.



# DQ in EAI

## *Key data quality issues with EAI?*

- It adds a layer of complexity.

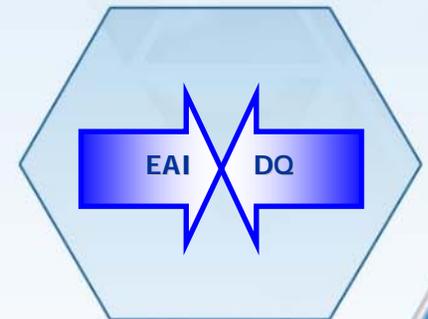


# ***DQ in EAI***

## *The Value in EAI?*

There's still tremendous value in EAI!!!

*Value*



# ***DQ in Semantics***

## ***Key data quality issues with Semantics?***

- Easiest to take an existing interface or predominant interface and use this as a basis or starting point.

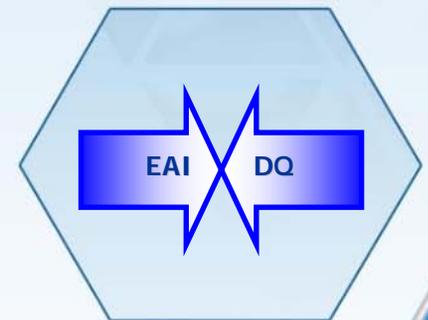
***Bigger Isn't  
Necessarily Better***



# ***DQ in Semantics***

## *Key data quality issues with Semantics?*

- Be cautious about a pre-defined or canned perspective of your business.
- Your business is yours and it has peculiarities.
- There are many issues with 'standards' such as:
  - Based on outdated transactions
  - Politics
  - Solid design that is extensible



# ***DQ in Semantics***

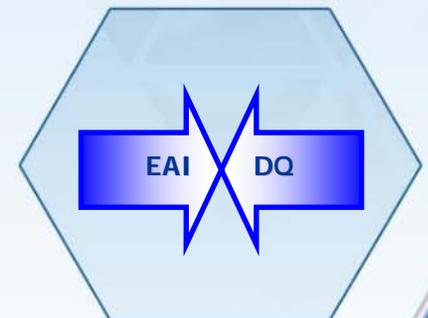
## ***Key data quality issues with Semantics?***

- When dealing with some legacy systems, good design of a 'common' semantic or definition of your data may lead to bad or difficult translations or transformations.

### **POL-TERM2 PICX (03)**

***The first character is the policy term.***

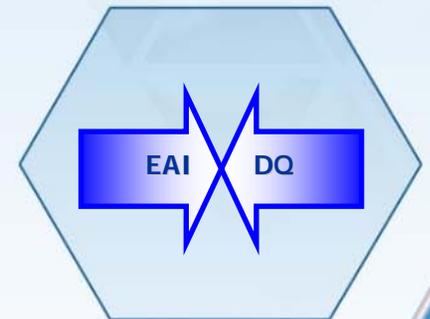
***The second and third character are the month of the inception for the policy.***



# ***Data Quality Guidelines***

*What is it*

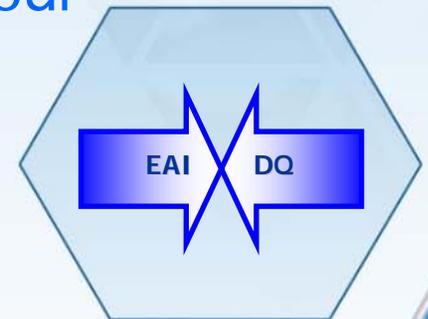
General Considerations for Data Quality  
Guidelines



# ***DQ Means Success***

## *General Considerations:*

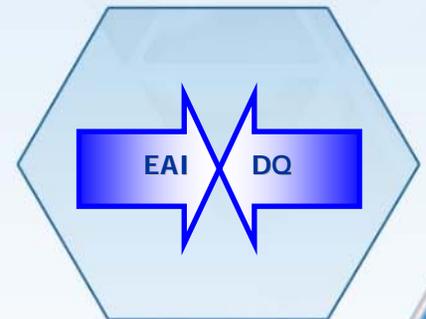
- Stop the ongoing bad design.
- EAI is NOT a magic bullet. Plan it out and implement it step by step. Review and revise your plan as needed.
- Make certain people with the right skills and knowledge are involved in designing your common semantic or language.



# ***DQ Means Success***

## *General Considerations:*

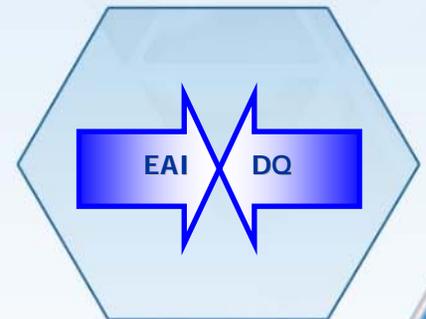
- Create a road map/project plan for your EAI efforts.
- Go through the efforts of defining your business /systems processes and services – START HERE –
- Prioritize your systems to become true service providers. Identify consumers and a migration plan. A system might have to function two different ways for some time.
- Keep the hardware/ middleware separate.
- Create a centralized team to manage the common message or definition format.



# DQ Means Success

## *General Considerations:*

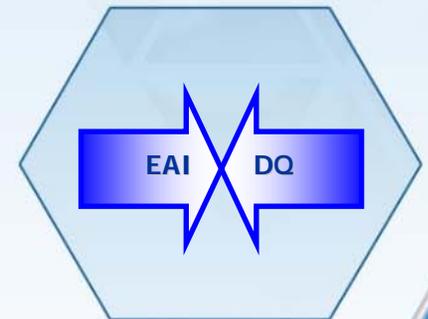
- Make certain people with the right knowledge and skills are involved in your EAI efforts.
  - *Someone with business knowledge*
  - *Someone with data design skills*
  - *Someone who understands legacy data/systems*
  - *If hierarchical formats are used (XML) – someone with this knowledge*
  - *A team with technical knowledge to manage the hardware / connectivity aspect.*



*How many legacy systems does it take to change a light bulb?*



*They all do, and they all do it differently.*



## *Questions?*

- I'd like to focus the questions on semantics and defining a common messaging format first .

