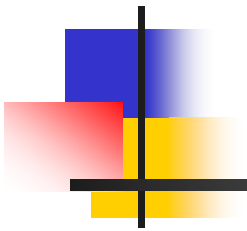
Project Management Trends & Using Agile Methods in Real Projects



L. Annette Foster

L. A. Foster & Associates, LLC

Quote CIO HP

"Technology is becoming more and more a part of every business process so it's now a part of any business conversation."

Randy Mott
CIO Hewlett Packard
4/16/2007 Wall St. Journal

Project Management Trends

As I see them:

1. **More structure, more discipline for Waterfall**
2. **Stovepiping/Specialization**
3. **Agile being embraced by those who have given up on Waterfall**

1. More Structure & Discipline

- **PMI**
  - **Only recognizes Waterfall methodology**
  - **Great for teaching the tools of project management**
  - **Very structured, very disciplined approach**
  - **(I think) Implies the use of the tools is the road to Nirvana**

1. More Structure & Discipline

- **IIBA (International Institute of Business Analysis)**
  - **Business Analysts have formed their own organization modeled on PMI**
  - **With Certification**
  - **Trying to teach the tools of Business Analysis**
  - **Increase structure, discipline**
  - **In RTP folks are lobbying them to include Agile**

2. Stove Piping/Specialization

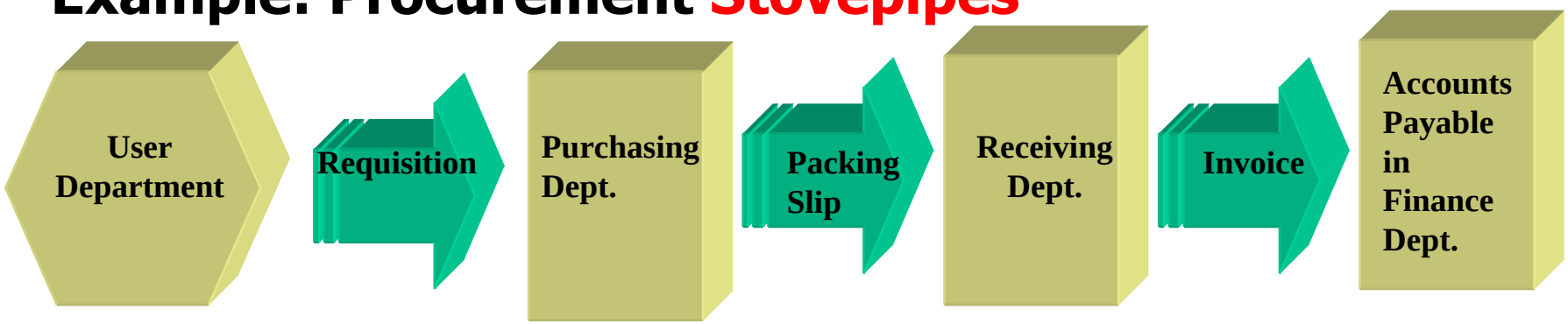
Business Process Reengineering

End-to-end process crosses employees/departments

Miscommunications/problems/delays found at the handoffs from 1 department to the next

Operating as separate stovepipes

Example: Procurement Stovepipes



2. Stove Piping/Specialization

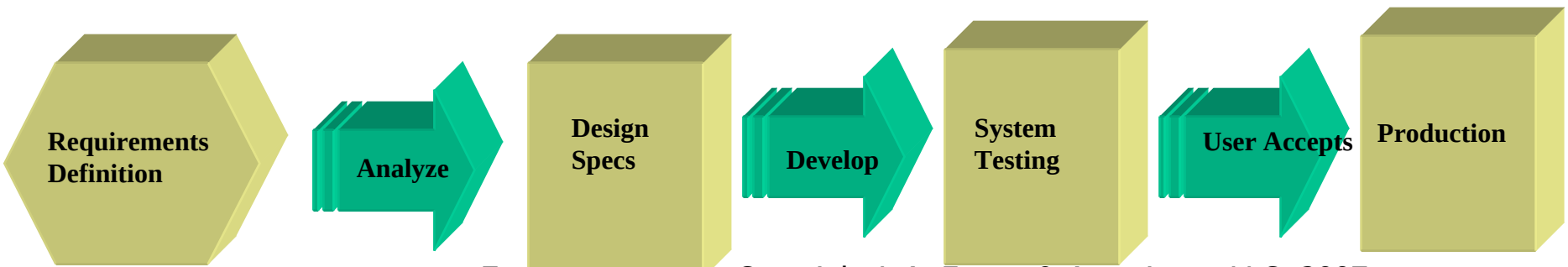
Implementing IT Systems is a Process

Crosses specialists/"sub"departments within IT
Operating as separate stovepipes

Miscommunications/problems/delays found at the handoffs from 1 specialist to the next

←----------Project Manager----------→

Business Analyst | **Systems Analyst** | **Architect** | **Developers** | **QA** | **Users+** | **Support**



2. Stove Piping/Specialization

IT teams have become stove piped

- **Specialization of roles**
- **Many PM's have never worked in IT**
  - **Don't know about IT**
  - **Nor do they care about the business**
  - **They just manage "the project"**
  - **How can they really know the workload they are managing?**

2. Stove Piping/Specialization

- There's less evolution or promotion from one role to the next
  - Losing the accompanying knowledge of what the other team members are doing
    - I'm a Java developer and I won't do analysis
    - I'm a business analyst and I never programmed or want to become a PM
- Large teams (no dual roles)
- Problem solving is less efficient

3. Agile Being Embraced

- Many software firms embraced in the 90's
- Commercial and small organizations are trying it
  - Why? Waterfall not working
  - It focuses on the business process and business value
- Agile training classes highly attended

My Personal Recommendations

For Project Managers

- **The most important skills are managing relationships and communication**

- **Look for Generalists**
  - **They've programmed**
  - **They've been a systems and/or business analyst**
  - **They care about the business process**

My Personal Recommendations

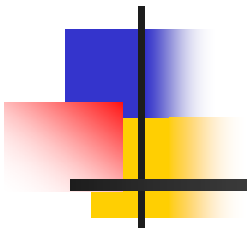
Have smaller brighter teams

- **A great team member will do more than two average ones**
- **Mythical Man Month—the more people on the team the more time you will spend on communication and the longer the project will take**
- **Look for Generalists who can do more than one role—fewer handoffs**

My Personal Recommendations

Have smaller projects and use Agile

- **Used for 6 years**
- **Small teams**
- **Great results**
- **I've done 15 Agile projects.**
- **Managed others on 27 more.**



Using Agile Methods in Real Projects

Agenda

- Brief Agile History
- Agile Theory
- Projects Suitable for Agile
- How an Agile Project Progresses
  - Discovery Workshops
  - Focus Groups
- How Agile Addresses Project Failure Points
- Expected Impact of Agile

History of Agile Methods

- Umbrella term is Iterative and Incremental Development (IID)
- New umbrella term is Agile Methods
- 1st developed in 1930's at Bell Labs for quality improvement and later used by Deming in 1940's
- Used for X-15 hypersonic jet development in 1950's

History of Agile Methods

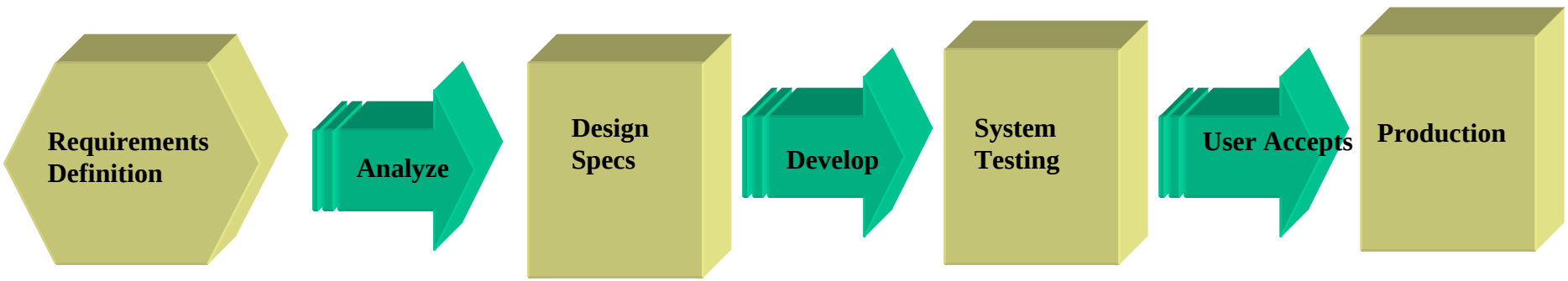
- First significant software project was for Project Mercury in late 1950's/early 60's
- Used by IBM Federal Systems Division and TRW in 70's and 80's
  - Command and control sw Trident submarine
  - Avionics software for the space shuttle
- Awareness and use accelerated in the 90's especially in software firms
- Expanding in commercial organizations

Meanwhile . . .Waterfall

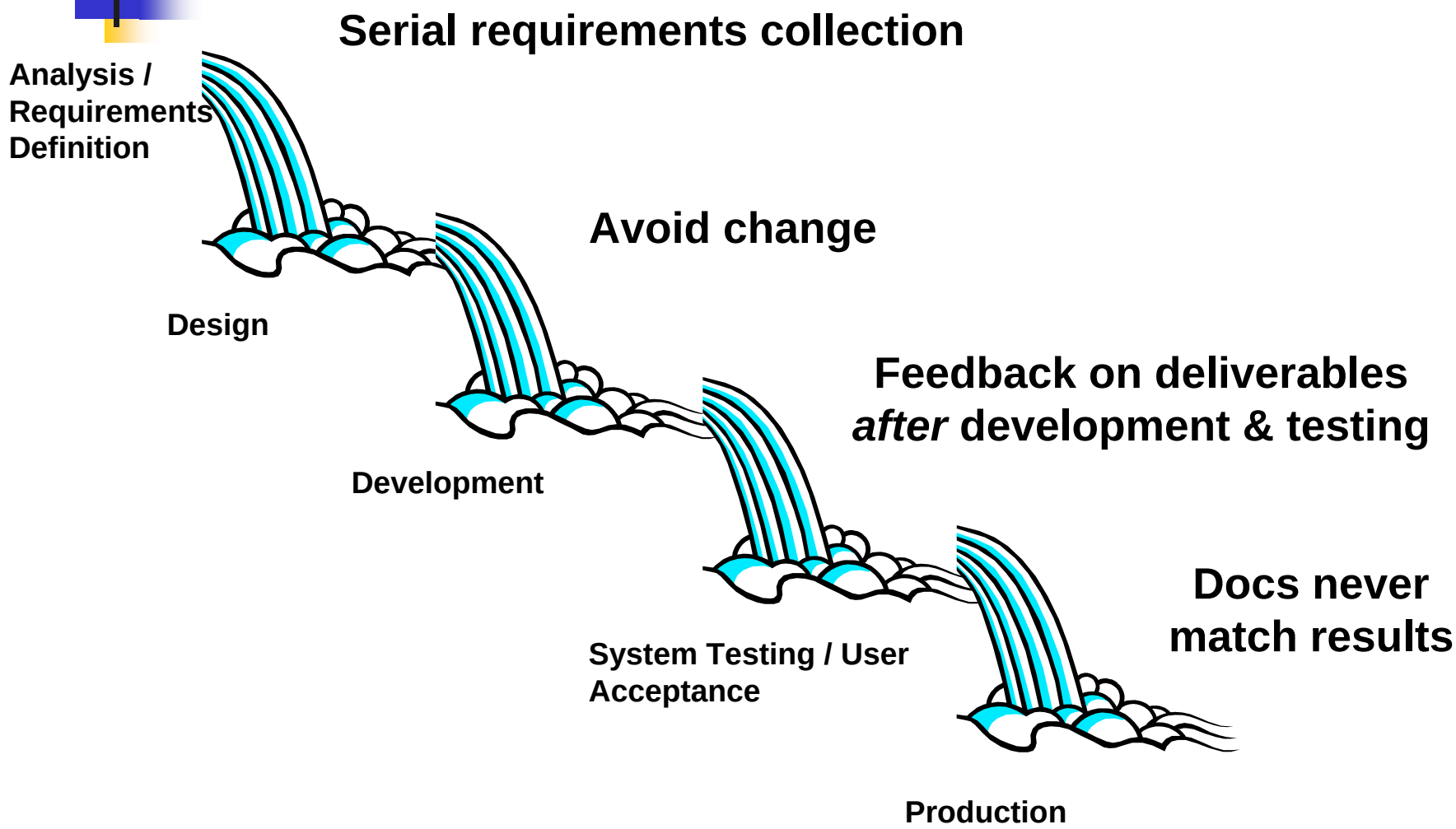
- First described formally in 1970
- Lots of large projects in the 60's and 70's were government projects and their contracting model prescribed waterfall
- Widely used, some spectacular project failures, organizations struggle with it

Waterfall Method

Traditional Methodology



Waterfall Method



Waterfall Dilemma

- The Project Team discovers the system doesn't meet user requirements at the end of the project when
  - the budget is nearly used
  - the deadline is near
- Choices are:
  - overspend and be late with happy users
  - be on time and on budget with unhappy users

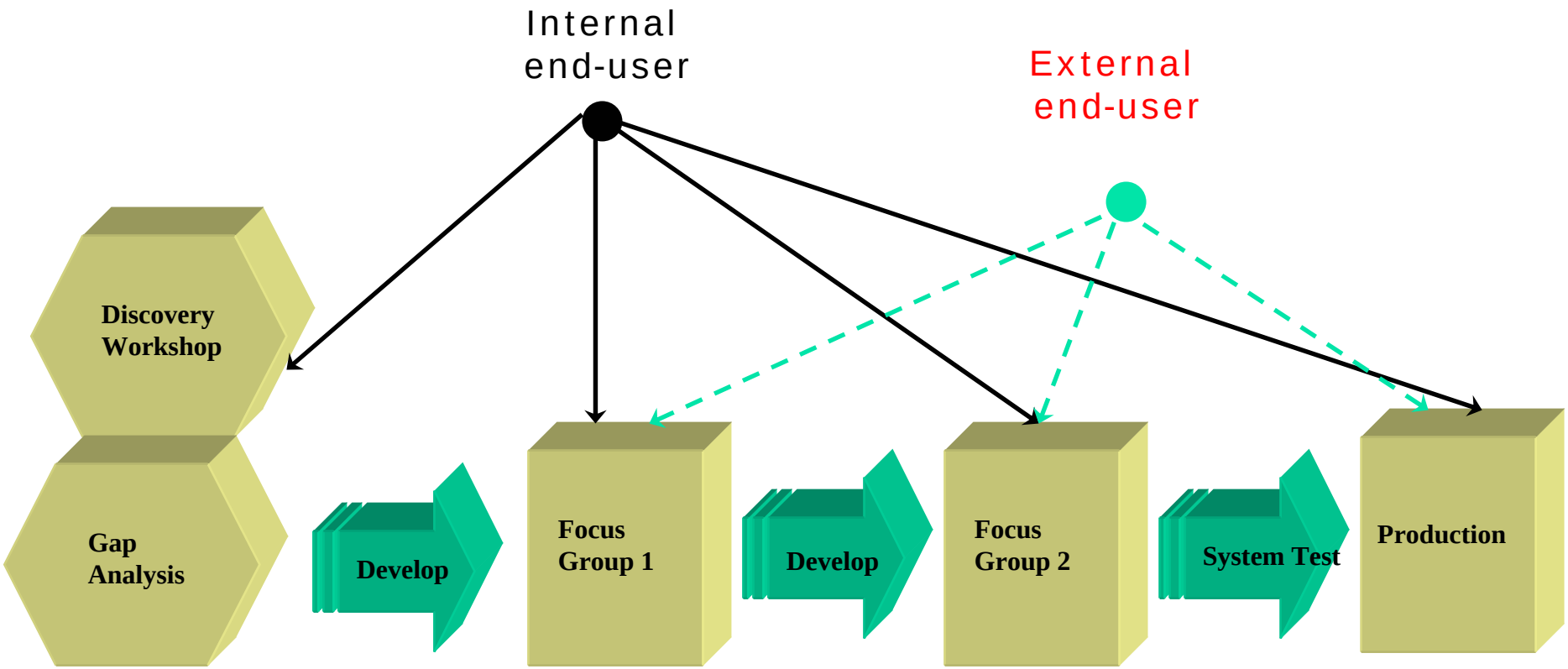
Agile Theory

Agile Method Defined

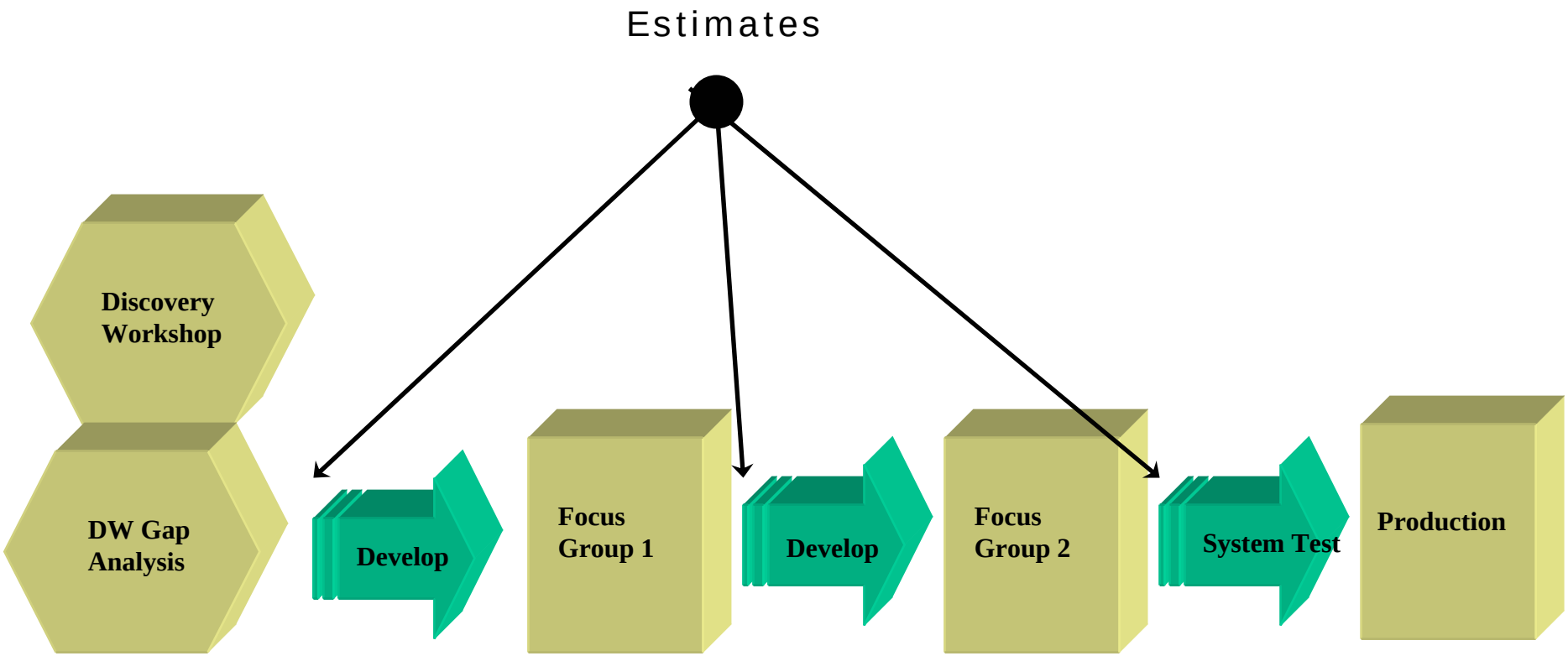
- is a methodology used in building software applications
- that compresses the analysis, design, build, and test phases into a series of short, iterative development cycles
- with continuous user involvement.

Agile addresses the waterfall dilemma.

Agile Method



Agile Method



Agile Fundamental Beliefs

- ***Impossible*** **to specify requirements precisely**
- **The application is the *only* acceptable model (seeing is believing!)**
- **Applications are *grown,* not *built***

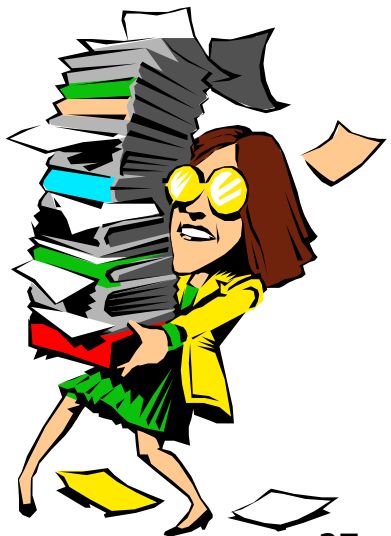
Impossible to specify requirements precisely

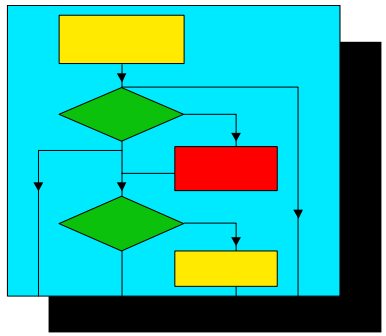
"Everything changes, even stone"
Claude Monet

- **Business changes during implementation**
- **Impossible to think of everything in the beginning**
- **Ambiguity of language**

The Application is the ***ONLY*** acceptable model

Requirements Specifications





Design Documents

The actual application

Applications are grown, not built

Software development is a learning process

- **We learn:**
  - **about the business**
  - **about e-business**
  - **about the technology**
  - **from our mistakes**
- **In the framework of a project**

Agile in Operation

- Change is expected and welcomed
- Focus is on end-user
- Delivery is incremental
- Milestones are short
- Risk is managed
- Goal is production Go-Live

Agile Framework

Is Agile

- **Lightweight**
- **Iterative**
- **Continuous ideas**
- **Professionals as team members**

But Still Disciplined

- **Structured (prepared) components: DW, FG, how to segment**
- **Classic project management:**
  - **Estimates**
  - **Schedules**
  - **Status reporting**
  - **Etc.**

Agile Philosophy

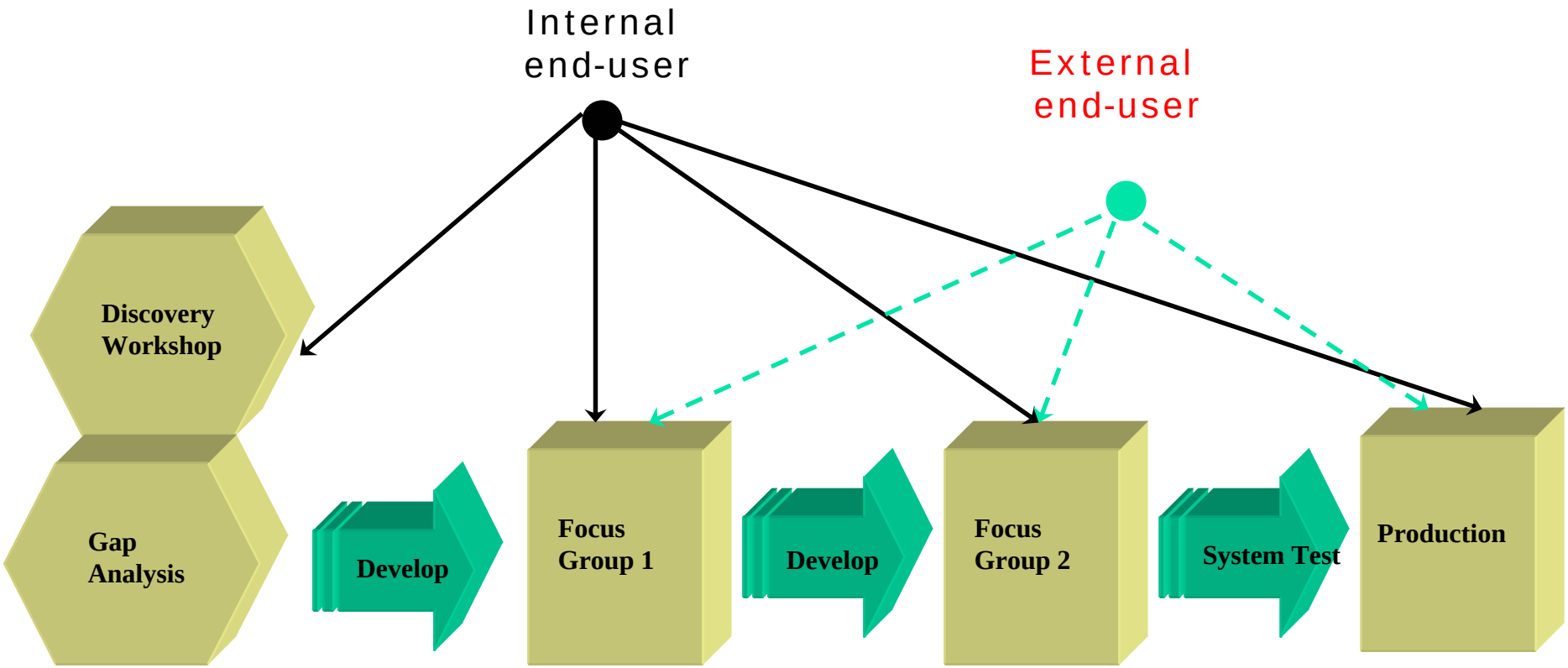
"No need to be defensive, we're in it together! Application development is all about *good communications* and *managing expectations.*"

Projects Suitable for Agile

- For projects under 9 months long
- Ideal for projects 2 – 6 months long
- Segment large projects into several small ones to
  - Use Agile at all
  - Effect quicker delivery for key components
- Can group very small projects together for go live deployment

(Even if you don't use Agile you can use components: DW and FG)

How an Agile Project Progresses



Discovery Workshop

- **A highly structured, facilitated workshop bringing together client decision makers and IT staff to produce high-quality deliverables in a short period of time.**
- **Emphasis on scoping, sizing and minimizing risk in the project.**

Discovery Workshop Goals

2 Goals

1) Frame the Project

2) Define the business requirements (Gap Analysis)

Discovery Workshop

- Defines the business goals and scope
- Reviews the current business process
- Formulates the desired new business process and system requirements
- Requirements must be essential to the goal
- Is business oriented (not technology oriented)

Identifying Attendees

From the relevant business areas:

- **Executive sponsor**
- **Managers (policy/process decision-makers)**
- **Subject Matter Experts (SME's) / hands-on process participants**
- **Hands-on Expert on current process**
- **End users ("customers")**
  - **If they don't attend here, they should be at later Focus Groups**

Identifying Attendees

- All Project Team members
- IT persons or their manager
  - Infrastructure—maybe mgr
  - Programmer--attend

Identifying Attendees

- **Roles don't necessarily correspond to persons. One person can serve in multiple roles.**
- **Size:**
  - **1 - 3 is too small**
  - **40-50 is way way too big**
  - **ideal is 6-20**
- **Attending when needed—ok for some participants but not all.**

Roles of the DW

- **Facilitator**
- **Scribe**
- **System demonstrator**

DW Agenda

- **Introductions** **10 min**
- **Sponsor introduction to the Workshop** **15 min**
- **Presentation** **15 – 30 min**

Frame the goal:

- **Define and frame the project goal** **1 hour**

DW Agenda

Gap Analysis:

- **Current business process -- capture use cases/testing scenarios** **30 – 45 min.**

- **Desired business process** **multiple hours**
  - **Gap analysis to a current system/manual process**
  - **Walk through in business process order**

Wrap-Up:

- **Prioritize requirements** **30 min**
- **Assign Action Item list** **30 min**

DW--Most Important Item

ATTITUDE

- It's better to know earlier
- Get into exactly the things you want to avoid
- But not emotionally

Sample Project in Agile

Online Ordering for Apparel Company

Sample Project in Agile

Online Ordering for Apparel Company

- Uniform division
- Customers gave employee first uniform
  - Each year gave an allowance of $
  - OR gave an entitlement of x items
- Their competitors had web-based online ordering with tracking by employee
- They were losing business

DW: Key Items to Identify

- **Project Sponsor**

frame the goal:

- **Project Goal**
- **Customers**
- **Products**
- **Business Benefits**
- **Measures of Success**

- **Project Risks**
- **Project Constraints**

Gap Analysis:

- **Business Process**

Further project definition:

- **Prioritize**
- **Action items**

Project Goal

Specific Achievable Measurable

****

The goal of this project is to deliver

this functionality

to this constituency

by this date.

Project Goal

Specific Achievable Measurable

***

The goal of this project is to deliver

order entry, order status and product information on the web supporting non-tracking, allowance ($) tracking, and entitlement (#) tracking

to Restaurant Chain A, Electronics Retailer B, and an allowance tracking customer TBD (representing 3 large contract customers)

by January 6, 2006.

Users

Who are all your customer groups?

- **Large contract customers** √
- **Non-contract customers**
- **Distributors**
- **Retailers (your own)**

Customers in Scope

By corporate contract customer:

- **Restaurant Chain A**
- **Electronics Retailer B**
- **TBD**

By user type:

- **Individual allowance employee √**
- **Individual entitlement employee √**
- **Non-tracking employee √**
- **Corporate purchasing agent √**
- **Franchise owner/Store manager √**

Internal Users

- **Customer Service**
- **IT**
- **Sales**

Products

What are your product groups?

What products will be purchased on the web?

Products

By generic product type:

- **Uniforms/service apparel √**
- **Corporate and embroidered sportswear √**
- **Miscellaneous products**

By stocking type:

- **Confined stock (made & kept in stock for this customer) √**
- **Stock (made and kept in stock for any customer)**
- **Alterations**
- **Customer defined alterations**

Business Benefits

- **Ability to be more competitive in the marketplace with innovative service offerings (increase sales)**
- **Ability to receive and process customer orders in the most time and cost efficient ways**
- **Reduced costs due to customer self-service**
- **Open a new sales and distribution channel to our customers**
- **Able to meet customers' changing demands for more efficient uniform program management**
- **Presence on the world wide marketplace**
- **Make it easier for our customers to do business with us**
- **Leverage investment in ERP system**
- **More accuracy because customers enter themselves**
- **Easier access for others inside our company**

Measures of Success

- A successful go live that meets our expectations for functionality, flexibility, speed, and cost
- Gives us the ability to manage and enhance the system in-house
- Number of orders placed
- Increased sales
- Reduced overhead
- Knowledge transfer from vendor to Apparel Co.
- Under Budget
- Meet go-live date.

Risks

- In order to remain competitive in the marketplace we must deliver a system that is better than our competitors
- Meeting customer's expectations
- Security
- Ease of use – will be complicated to use
- Contending projects for resources
- Not getting sufficient feedback from customers
- Identifying the right customers that will actually use the application
- Over-complication – trying to develop too much functionality
- Completion of Entitlement system on time.

Constraints

- **Budget**
- **Resources**
- **Time constraints—must deliver to the customer on time**
- **Technology (one T1 connection – bandwidth)**

Running the DW

- Don’t discuss design, solutions, or technical details---just get requirements.
- Unbiased facilitation.
- Write project framing on flipcharts for visibility.
- Scribe gets down all decisions, ask for clarification.

Justifying the Discovery Workshop

- **Creates buy-in**
  - **Highest level sponsor 10 minute endorsement speech**
    - **He's funding**
    - **Here's the outcome he'd like to see**
    - **Most people will get on board**
  - **Attendees will buy into because they've had input into/helped design**
  - **Attendees will love that you listened to their concerns/objections**

Justifying the Discovery Workshop

- **Builds consensus**
  - **Review differing points of view in workshop**
  - **Try to make decision right there**
- **Get everyone in agreement on the final project goal at the beginning ******
- **The DW will shorten the project.**
  - **Gets business policy and process questions out earlier in the project.**
  - **Gets surprises from the users/customers out early enough in the project to allow recovery**
- **Builds ownership in the extended team**

Discovery Workshop

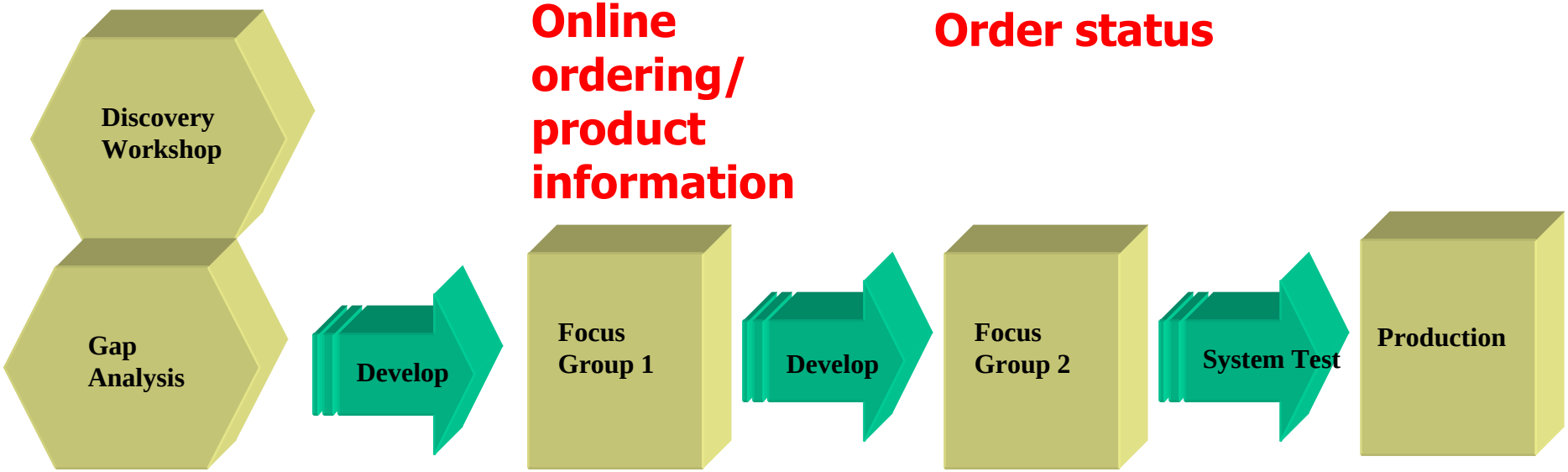
- It's a group working session—not a meeting
  - Participate!!!
  - Communicate!!!
- Your DW's will get faster over time
  - Everyone will know how they work
- If a project is small still do a DW but less formally
  - Do all the preparation and steps

Post Workshop Activities

- Document the DW (goal, etc.)
- Document the requirements as ability-to's
- Work on action item list
- Create an estimate for ability-to's to implement, select what's in
- Segment the work into Focus Groups
- Create a schedule —FGs x weeks apart
- Perform more detailed design

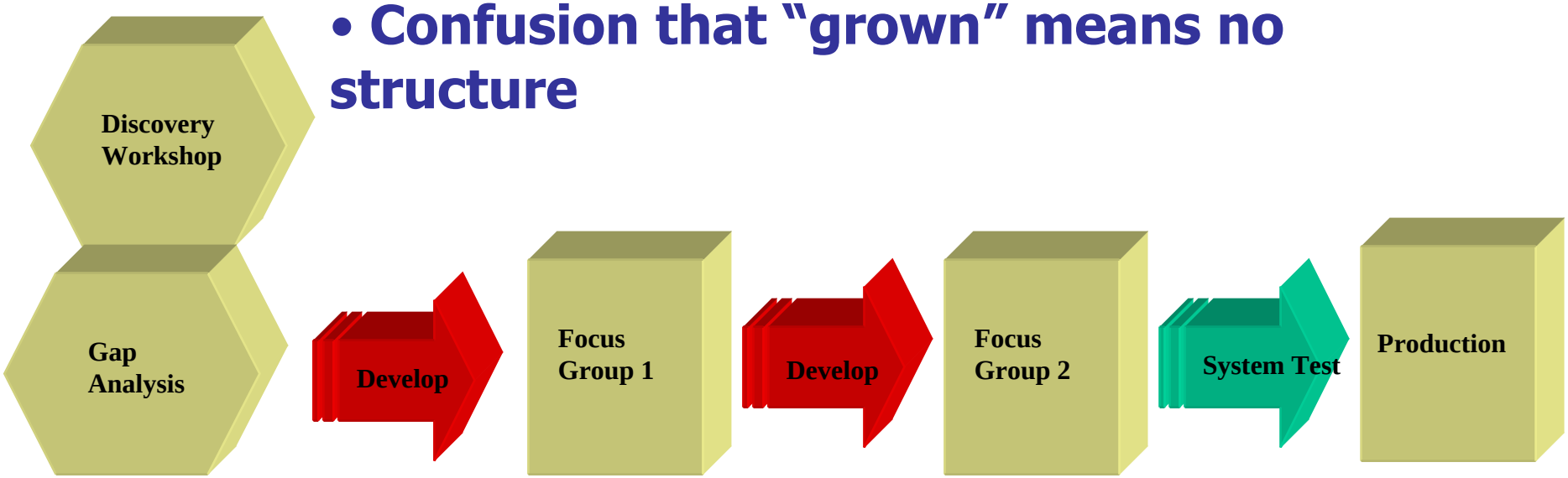
Agile Segmentation for FG's

Online Ordering for Apparel Company



An Aside: Agile Articles

- A lot of articles focus on **development**: **Scrum, programming in pairs**
- Don't have to do
  - Confusion that "grown" means no structure



Focus Group

A facilitated workshop that brings together the business sponsors, customers/users, and developers to review the customization development completed to date and to provide feedback.

- **Deliverable is documented change requests.**

Focus Group

Agenda

- **Brief presentation of project to date and Agile for newcomers**
- **Review live application (no Powerpoints!!)**

Length: Usually half day -- depends on functions covered

Focus Group: Participants

- Same attendees as in Discovery Workshop
- End users of the system
- Facilitator
- Scribe
- Demo driver

Focus Group: Preparation

- **Completion of development and testing of requirements assigned for this FG**
- **Develop business scenarios (aka Use Cases)**

Focus Group: Business Scenarios

- Show business scenarios to cover all the ways the system will be used.
- From a user perspective
- Examples:
  - I am an allowance employee and this is how I would place an order
  - I am an entitlement employee and this is how I would place an order
  - I am a store manager and this is how I would place an order

Focus Group: Behavior

- **Goal: get feedback**
- **The purpose is to get honest reactions (including a bad ones) while there is plenty of time to change the application.**

Focus Group: Benefits

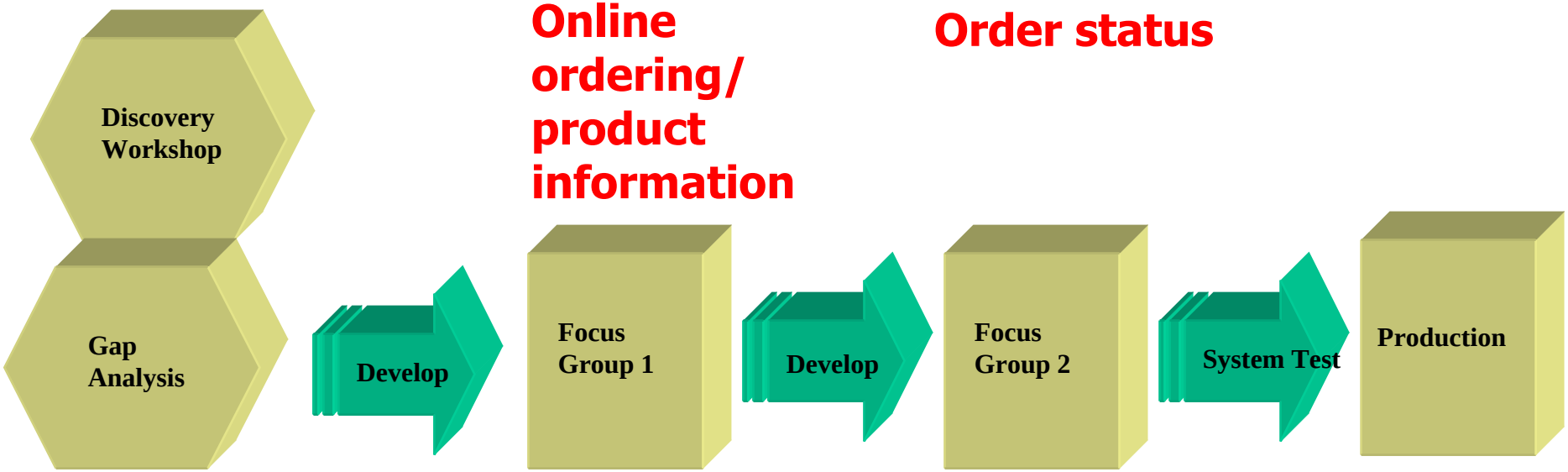
- Gives team focus as they must work to a deadline
- Gives a reason for testing
- Gets surprises from the users/customers out early enough in the project to allow recovery
- Builds ownership in the client team when they prepare for and run the FG
- Builds buy-in from the attendees as they see what they requested in the application

Post Focus Group

- **Result: List of prioritized change requests**
- **Estimate on change requests**
- **Meeting to decide:**
  - **which change requests will be developed**
  - **Trade previous (not done) requirements for new ones from Focus Group if time or money constraints exist**

Agile Flow

Online Ordering for Apparel Company



Post all Focus Groups

- System testing
- User training
- Migrate to production
- Go live

Why Have Projects Failed?

1998 Study of 23,000 software projects:

- **Lack of executive support**
- **Uncommitted team**
- **Ambiguous requirements**
- **Changing requirements, "scope creep"**
- **Insufficient QA/change control**
- **Lack of focus, too many distractions**
- **Not addressing the business problem**
- **Prioritizing technology over solutions**
- **Paying insufficient attention to customers**
- **Surprises**
- **Mismanaged risk**

How Agile Avoids These Failure Points

- **Lack of executive support**
  - **Agile exposes lack of commitment in Discovery Workshop**

- **Uncommitted team**
  - **Agile exposes in Discovery Workshop discussions**
  - **Symptom: misses Focus Group dates**
- **Lack of focus, too many distractions**
  - **Agile creates and gets commitment to a targeted goal that can be accomplished by the go live date**
- **Ambiguous requirements**
  - **Focus Group interaction identifies and clarifies misunderstood requirements**

How Agile Avoids These Failure Points

- **Changing requirements, *scope creep***
  - **new requirements must be essential to the goal**
  - **must trade requirements to meet the goal**
- **Insufficient QA/change control**
  - **involves users in testing from the start**
- **Not addressing the business problem**
  - **Requires business representation in the Discovery Workshop and Focus Groups**
- **Prioritizing technology over solutions**
  - **Requires business representation in the Discovery Workshop and Focus Groups**

How Agile Avoids These Failure Points

- **Paying insufficient attention to customers**
  - **Requires customer attendance in Focus Groups**
- **Surprises**
  - **Forces learning of the surprises early when trying to meet incremental milestones**

- **Mismanaged risk**
  - **Identifies risk early by asking to hear risks and forcing exposure at incremental milestones**

Top 5 Factors for Project Success

1. **User Involvement**
2. **Executive Support**
3. **Clear Business Objectives**
4. **Experienced Project Manager**
5. **Small Milestones**

Agile provides 1, 3, and 5 very well

Impact of Agile

- Collaborative approach to projects
- Lightweight but structured approach appropriate for some projects and some organizations
- Higher likelihood of project success
- Faster and more effective delivery of software

Questions

L. A. Foster & Associates, LLC

Services

- Agile methods
- Discovery Workshops/ Focus Groups
- eBusiness
- Project Management Improvement
- Requirements Analysis
- Systems Design/ Selection
- Business Process Redesign

Questions??

Contact information:

L. Annette Foster

L. A. Foster & Associates, LLC

annette.foster@mindspring.com

919.844.1150