AppliedMicro's use of SAP Solutions to optimize Supply Chain

Chet Gandhi & Animesh Jhalani

May 15th 2013

AppliedMicro Overview (NASDAQ: AMCC)

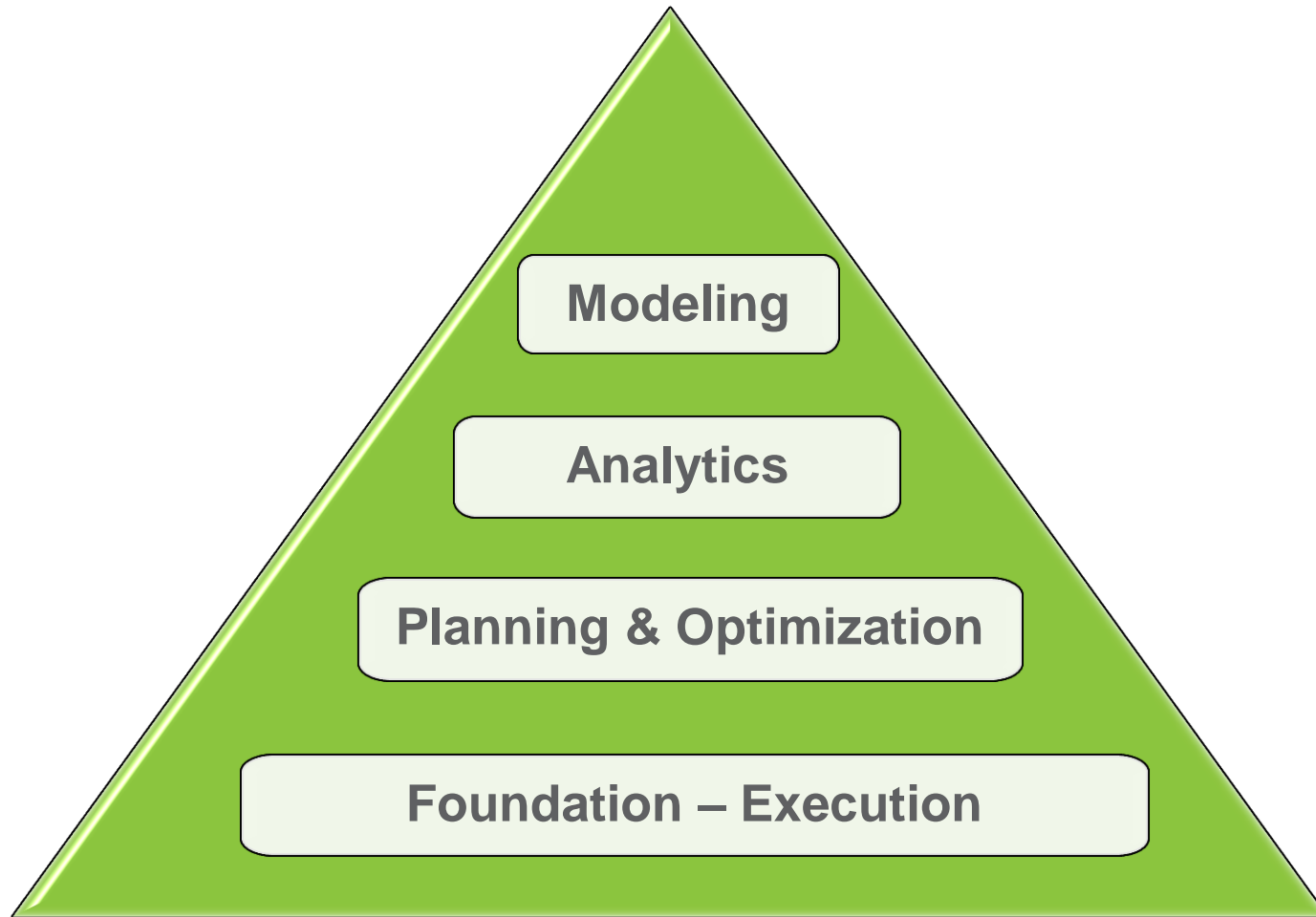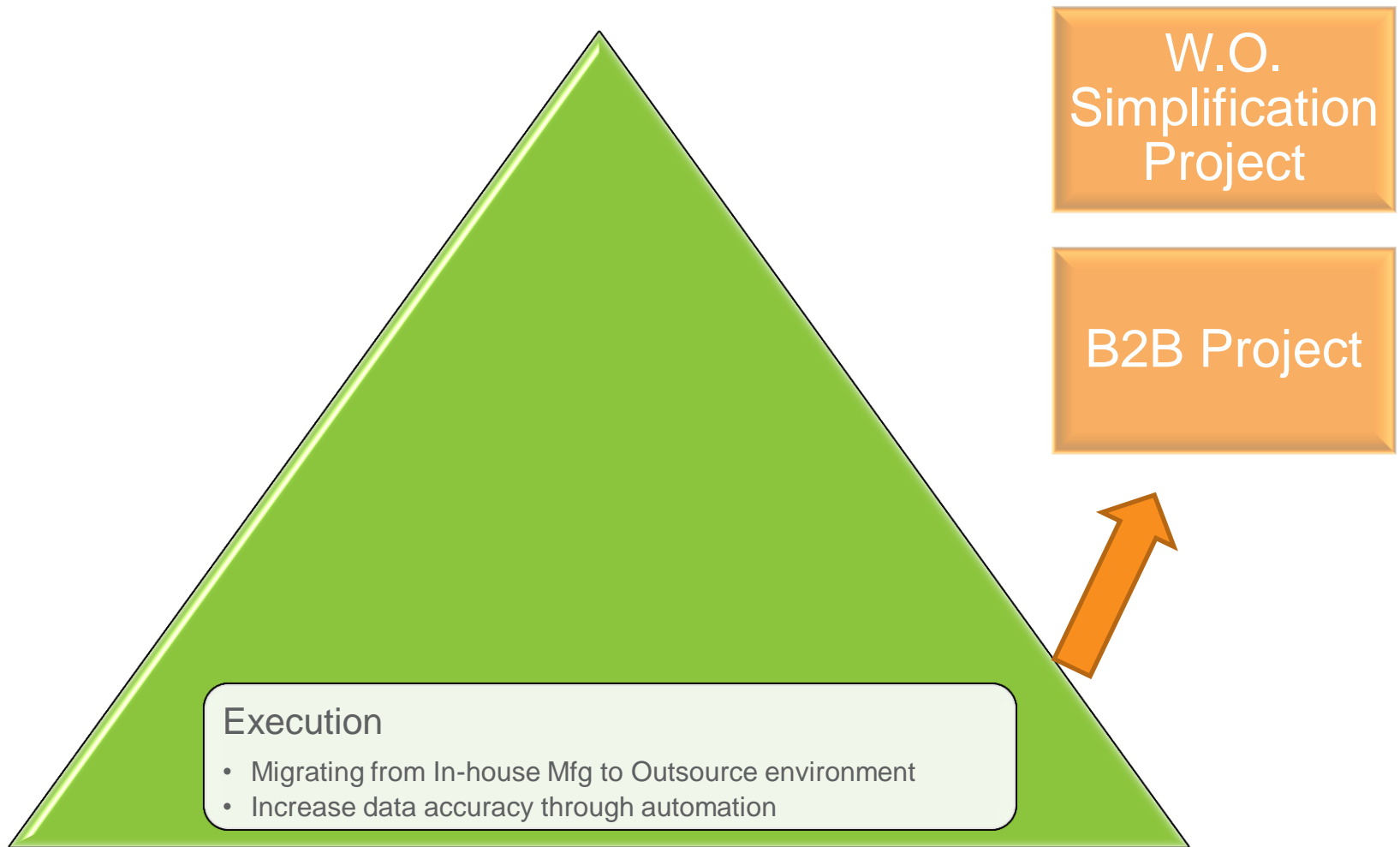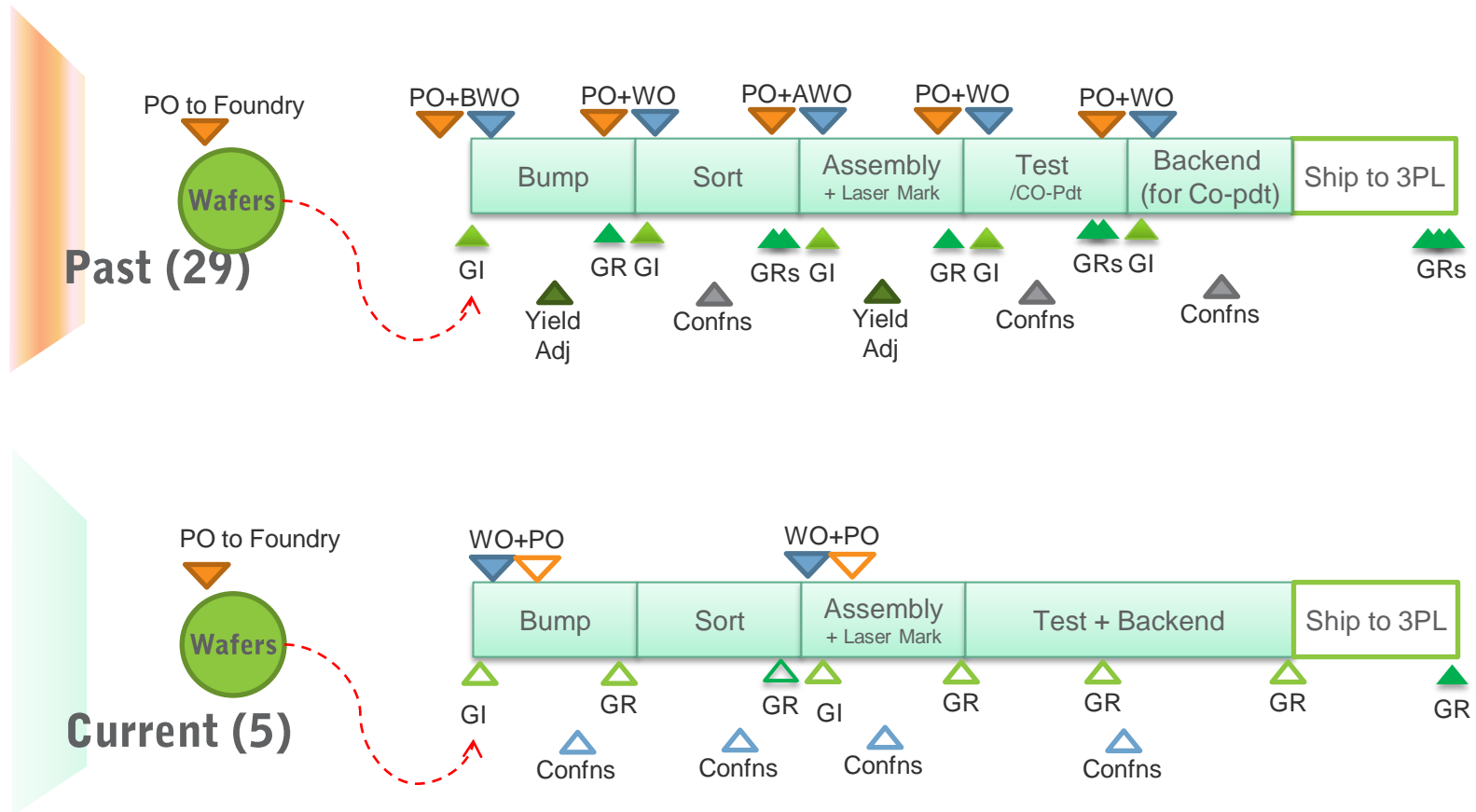| Company	• Founded – 1979 • Headquartered in Sunnyvale, CA
Industry	• Fabless Semiconductor • Processors and Connectivity chips
Customers	• ~1200 customers with ~ 800 active products
Employees	• ~ 650 Worldwide
ERP	• Implemented SAP - 1996
Landscape	• ECC 6.0, CRM, SCM, BW, BO

applied micro™

Supply Chain - Path to Excellence

- Modeling
- Analytics
- Planning & Optimization
- Foundation – Execution

applied micro™

Supply Chain - Path to Excellence - Foundation

W.O. Simplification Project

B2B Project

Execution
- Migrating from In-house Mfg to Outsource environment
- Increase data accuracy through automation

Work Order Simplification & B2B Project

Past (29)

PO to Foundry — Wafers

PO+BWO | PO+WO | PO+AWO | PO+WO | PO+WO

| Bump | Sort | Assembly + Laser Mark | Test /CO-Pdt | Backend (for Co-pdt) | Ship to 3PL |

GI | GR GI | GRs GI | GR GI | GRs GI | GRs

Yield Adj | Confns | Yield Adj | Confns | Confns

Current (5)

PO to Foundry — Wafers

WO+PO | WO+PO

| Bump | Sort | Assembly + Laser Mark | Test + Backend | Ship to 3PL |

GI | GR | GR GI | GR | GR | GR | GR

Confns | Confns | Confns | Confns

Solid triangles = manual steps, Hollow triangles = automated steps

applied micro™

Supply Chain - Path to Excellence - Optimization

New BU

Ability to Scale

Planning
- Build Plan planning through Excel
- Manual bin substitutions

Execution
- Simplified & Automated Transactions
- B2B Automation

applied micro™
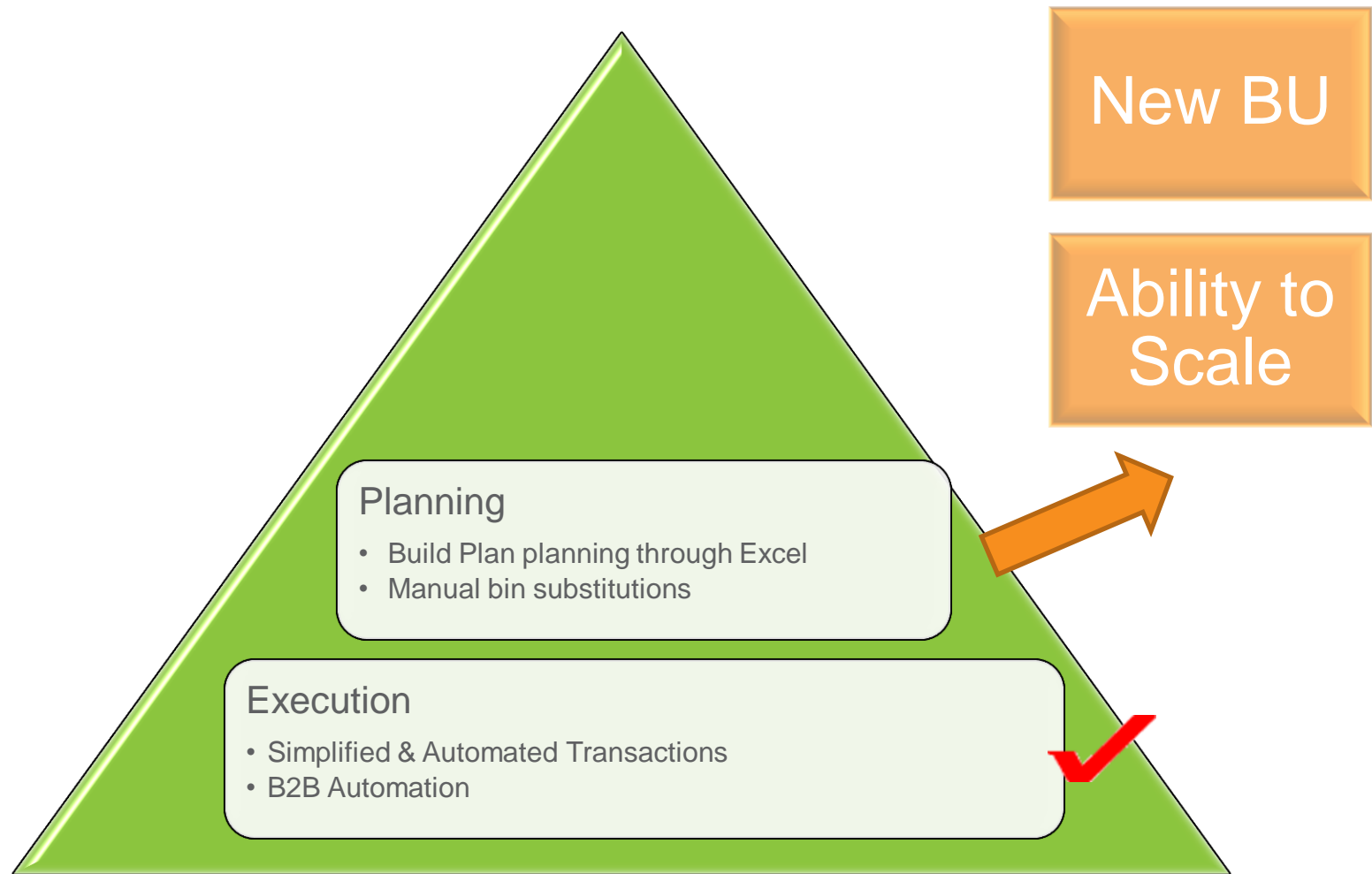
Business Drivers for Planning Project

New BU
Complex Processor Binning

- Support multi-level Binning ~64 products from 1 wafer
- Support Postponement Strategies at die bank and post test

Scalability
Planning to double in 12-18 months

- Support "What if" scenario analysis
- Minimum extra master data maintenance
- Solution to allow capacity planning in future
- Reports for easier preparation of build plan meetings

High Level Business Requirements

Usability
- Minimum extra master data set up in APO
- Continue to use ECC the same way

Solution
- Automatically handle bin substitutions
- Handle "what-if" analysis
- Master data to be maintained in ECC

Reporting
- All ECC reports must work
- Provide real time reporting across products
- Capture historical MRP snapshots

Planning Options in APO - SNP

Heuristics
- Planning similar to MRP
- Cannot account for constraints
- Supports Long term planning

Optimizer
- Cost based Heuristics planning
- Requires accurate cost data to derive reliable solution

CTM Capable-to-Match
- Multi-level supply & Demand matching
- Utilizes constraints and priorities
- Supports Material substitutions

apm applied micro™

SNP Planning Solvers Comparison

Focus Areas	Heuristics	CTM	Optimizer
Functional Coverage	🔴	🟢	🟢
Viability of Plan Obtained	🔴	🟢	🟢
Difficulty of Configuration	🟢	🟡	🔴
Maintenance	🟢	🟡	🔴
Ease of Analyzing Planning Output	🟢	🟡	🔴
Performance	🟢	🟡	🔴

CTM – Process Flow

SAP APO

SAP ECC

SNP – CTM Engine

Substitution

Parameterization

Supply categorization

CTM Run

CIF

BPS

Forecast

Transaction Data

Sales Orders

Supply Orders

Inventory

Master Data

Material Master

BOM + Routings

Production Versions

Results Analysis:

Planned Orders

Purchase Requisitions

Planning Results

Wafer Starts

Assembly Starts

Fuse & Mark Starts

apm applied micro™

Master Data: Only Substitution Rules in APO

Real Time Reporting: APO Planning Book

Planning Book: [Live] SNP INTERACTIVE PLANNING / SNP PLAN

APO Product   QC2438-0002-SR06-2

Selected Objects

Product Number	Type	Location	Produc
QC2438-0002-SR06-2		0000009618	SRTD -
QC2438-0002-SR06-2		US01	SRTD -

Planning Book/Data View — Description

- ▼ Z9ASNP94
  - · ZSNP94(1) — SNP PLAN

Macros

- ▼ For data view: ZSNP94(1)
  - ▸ Directly Execut. Macros

SNP PLAN	Unit	M 07/20...	M 08/20...	M 09/20...	M 10/20...	M 11/20...	M 12/20...	M 01/20...	M 02/20...
Forecast	DIE								
Sales Order	DIE								
Dependent Demand	DIE	6,970	8,923	6,309	10,925	8,857	9,934	10,208	10,218
Substitution Demand (Planned)	DIE								
Total Demand	DIE	6,970	8,923	6,309	10,925	8,857	9,934	10,208	10,218
Production (Planned)	DIE			208	1,981	1,761	1,604	1,641	1,643
Production (Confirmed)	DIE	1,064							
Substitution Receipt (Planned)	DIE	3,367	1,047	8,251	8,943	7,096	8,330	8,566	8,574
Total Receipts	DIE	4,431	1,047	8,459	10,924	8,857	9,934	10,207	10,217
Stock on Hand	DIE	6,553		827	826	826	826	825	824
ATD Receipts	DIE			208	1,981	1,761	1,604	1,641	1,643
Cum Delta to Demand	DIE	2,918	-6,005	-12,314	-23,239	-32,096	-42,030	-52,238	-62,456
Cum Delta to Backlog	DIE	9,894	9,894	9,894	9,894	9,894	9,894	9,894	9,894

Project Success Factors

User Engagement — Show & Tell from the beginning

- Installed SCM DEV environment integrated with ECC sandbox for 'real' data
- Business user engaged regularly from proof of concept phase in SCM Dev

Scope Control — Phased Go-Live approach agreed

- Users were available part time only
- Documented Requirements for each phase