

Rockwell Collins and Pbfree Soldering Processes!

**David Hillman
Rockwell Collins
Advanced Operations Engineering
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Rockwell Collins and Pbfree Soldering

Agenda

- Background**
- Industry Current Status**
- Rockwell Collins Status**

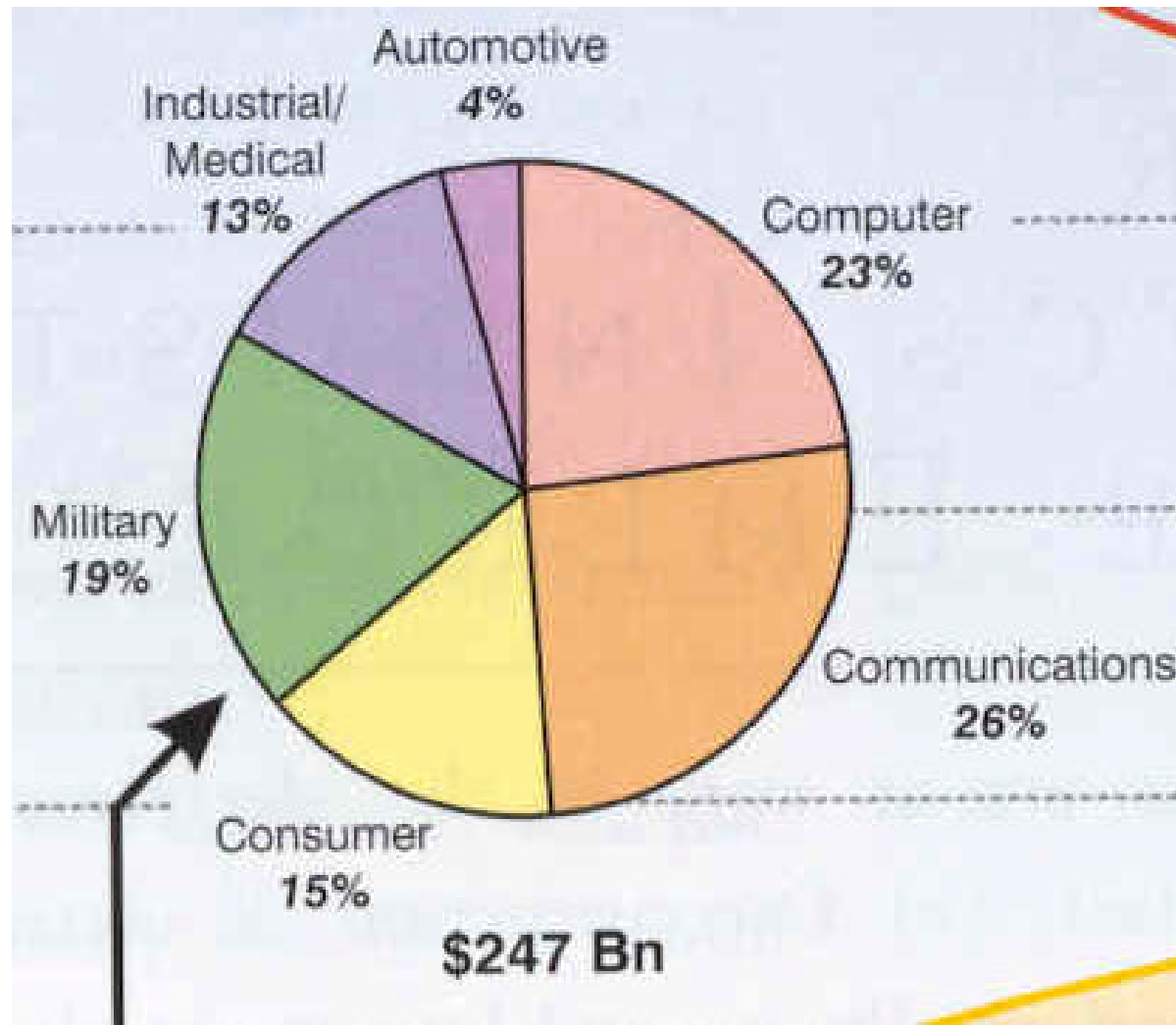
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Background

- **Waste Electrical and Electronic Equipment (WEEE)**
 - **Prevention of waste**
 - **Reuse, recycling and other forms of recovery**
 - **Collection targets 4-6 kg per year per person**
- **Restriction of Certain Hazardous Substances (RHS)**
 - **Contribute to environmentally sound recovery and disposal**
 - **Lead, mercury, cadmium, hexavalent chromium, PBB and PBDEs to be substituted by 1 January 2006**
- **The Drafts Are Now Preliminary Requirements**
 - **Industry Review/Comment Period For 2002-2003**
 - **Implementation 2006**

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Background

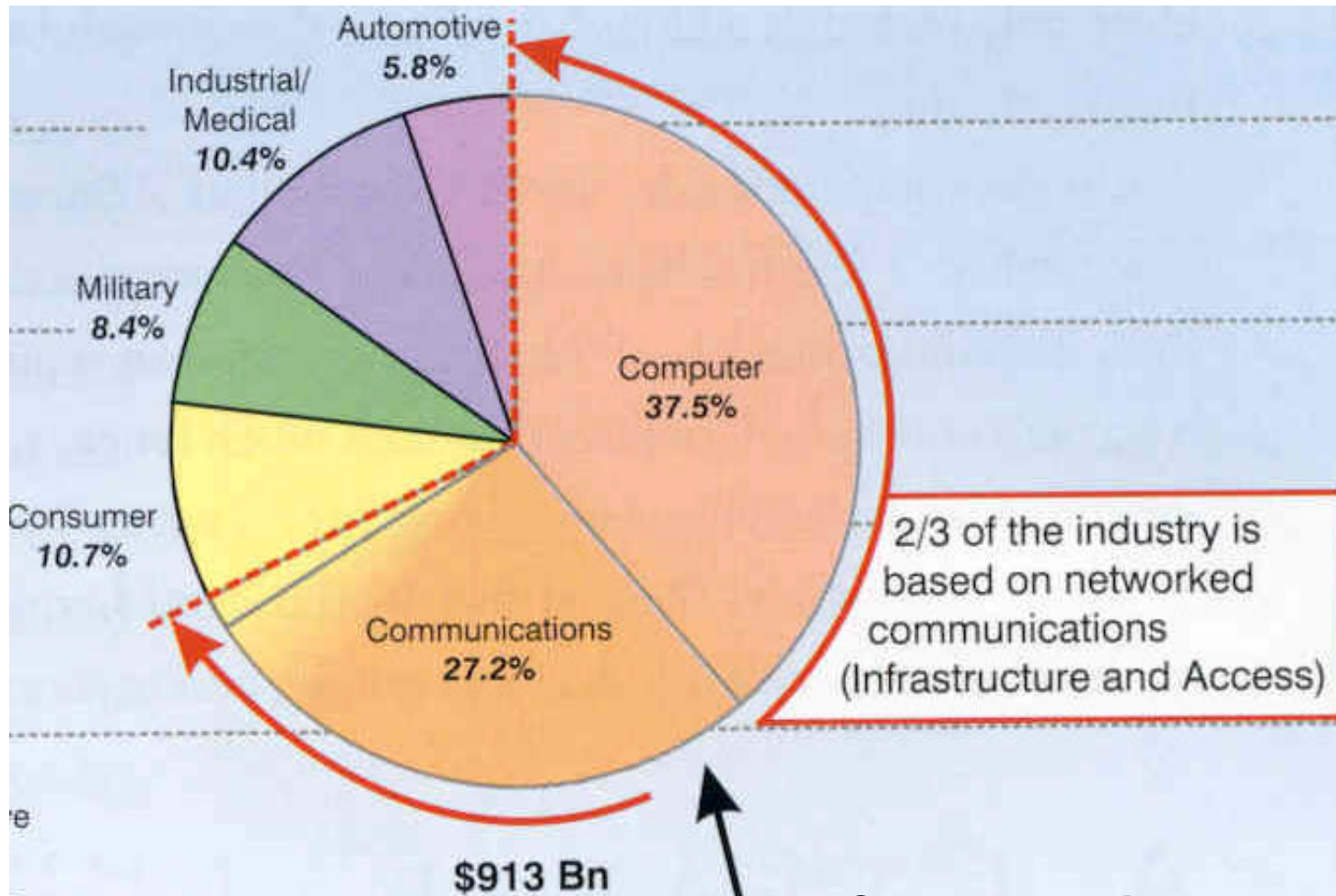


**During
The
1980's**

***Courtesy Prismark Partners LLC**

Rockwell Collins and Pbfree Soldering

Background



**During
The
1990's**

***Courtesy Prismark Partners LLC**

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Background

Computer/Communications Segment

49% Market Share *VS* 64.7% Market Share

425 Million Cell Phones Produced In 2000

“Lead Additives In Gasoline Are Bad”

“Lead Additives In Paint Products Are Bad”

“Can Lead Be Eliminated From Electronics?”

Consumers Have Been Socially Biased That Lead Is Bad!

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Industry Current Status

**Current
Direction
Of The
Class 3
OEMs !!!**

**Class 2 - Industrial
Electronics - Will
Make 2006 Deadline**



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Rockwell Collins Status

- **Impact Examples:**

- **A: ACF Bonding – Manchester Facility**

- **Sony CP3131FT ACF bonding tape (CPN 838-0017)**
- **Obsolescence date of March 2004**
- **6 Year Use History - Replacement Testing Underway**

- **B: AVX Capacitor Surface Finish – Collins Wide**

- **100% Tin Finish Since ~ 1999 Implementation**
- **Tin Whisker Concerns!**
- **Soldering Process/Nickel Barrier Risk Mitigation**

- **C: Printed Wiring Assembly Flux Changes**

- **Reflow Temp changes: 183°C to 221°C**
- **Flux formulations Changes Anticipated**
- **Assembly Cleanliness Baseline Re-characterization**

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Rockwell Collins Status

- **Five Areas Of Focus**
 - **Area #1: Printed Wiring Board Finishes:**
 - * **Effort Complete: New Immersion Finishes Implemented**
 - **Area #2: Component Lead Finishes:**
 - * **Effort Complete: Surface Finish Policy Implemented**
 - **Area #3: Equipment/Manufacturability:**
 - * **Effort In Progress: 7 DOE Assembly Process Trials Finished**
 - **Area #4: Reliability:**
 - * **Effort In Progress: NCMS, JGPP/JCAA, & UIC Consortia**
 - **Area #5: Legacy Product Issues:**
 - * **Effort In Progress: JGPP & UIC Consortia**

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**Rockwell Collins Recommendation:
“What Isn’t Being Done And Should Be!”**

Printed Wiring Assembly Reliability:

- * Test Vehicles Are Dandy But.....**
- * Need A Pathfinder Program(s)**

Legacy Product Issues:

- * A Logistics Approach/Methodology NOW**
- * Need Shareholder (aka users) Inputs NOW**

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Questions ???

