Standardization in the Electronics Industry Recession

James “Mark” Bird
NeoKinetics, Inc.
Tempe, AZ 85281
mark.bird@neokinetics.us

Challenges for Standards

- Everyone wants a competitive edge
  - But the customers want standardization
- So many companies, so little time
  - They work together because they must
- Everyone must get the chance to speak
  - Everyone must listen – collectively decide & move on quickly

Delay is NOT a viable market option

The Industry Challenge

Standards At The Edge of Technology

Balance the future needs between technology & multiple applications

- Requires input from many sources
- Requires coordinated development

Choose a path before knowing where it leads

- Standardize what does not yet exist (e.g. 0.1μm products, LEDs, MEMs)

Relevant standards should at least be concurrent with technology development

Why Standards ?

- To the End Users
  - Low Price, Broad Supply
  - Uniform Terms & Definitions
  - Consistent Quality & Reliability
  - Common Packaging
  - Interchangeable multiple supplier solutions
- To the Supplier
  - Large demand, pre-sold customer base

Time to Market for Standards

If It Is Not Fast Then The Cost is Irrelevant

- Standards have time value very much like money
- The speed at which technology changes dictates how fast standards must be developed
- To continually accelerate standards development the processes must lead technology
- The end user ultimately validates every standard

"Look behind you. If no one is following, you are not leading"

Revenue Based on Influence

- Standards are published after they are complete – substantially reduces user confusion
  - Work in progress is available to members only
  - Private web access for ongoing work, so it is also always available even if you miss a meeting
- Those that participate influence the outcome
  - Member companies decide what paths to take in standardization
  - If you are not there, your competition may be deciding your future

Standards committees live on technology's leading edge

Recession's impact on Standardization

- OEMs, IDMs, Fabless Companies and Vendors limiting engineering resources
- Companies paying standardization committee dues but few active in committee process.
- Committees' agendas (program of work) shrinking; meetings per year reduced.
- Standardizations delayed or cancelled to defer immediate expenses.

Companies “Standards” response

- Standards experts laid-off, retired early or moved to other jobs. Companies reducing their ability to impact, defend or drive standards changes or creations.
- Companies focused on short term $$, losing sight on future cost saving from standardization
- Management ignoring cost reduction created by standardization.

Effects of “Standards” response

- Duplicate standards in the market place, increased confusion on which to use.
- Future costs of testing and configurations unknown until implemented.
- Vendors not ready to support new package families or configurations.
- Higher costs and longer lead-times on new product variations.
- Increased costs across the entire supply chain.

NKI Standards/IP representation

- NKI offers expert Standards/IP Representation, providing graduated client engagement - from basic meeting updates through development and industry deployment of customer introduced standards.
- NKI follows time and industry proven processes for the management and development of industry standards and client IP.
- NKI affords over 100+ years of combined industry experience in Standards/IP management with its internationally recognized Standards experts.

NKI Standard/IP Solutions

	Current	Level 3	Level 2	Level 1	Level 0	Assumptions:
JEDEC dues	$ 4,000	$ -	$ -	$ -	$ -	
Employee salary	$ 50,000	$ -	$ -	$ -	$ -	50% of $100K (burdened)
Travel/lodging	$ 15,000	$ -	$ -	$ -	$ -	Three (3) national trips/year
NKI Experts retainer	$ -	Dependent on number of committees represented				
TOTALCOST	**$ 69,000**	Graduated by level less than Current				
Meeting summary	**?**	**X**	**X**	**X**	**X**	Three publications/year
Expert market implications analysis	**?**	**X**	**X**	**X**	**X**	
Standards representation (grouped)	**?**		**X**	**X**	**X**	Three (3) site meetings/year
Standards summary presentation/ Q&A			**X**	**X**	**X**	
Company focus/facilitation			**X**	**X**	**X**	
Strategic Stds alignment/action plan				**X**	**X**	Three (3) on-site meetings/year
Individual/group facilitation & plans				**X**	**X**	
Standard development/submission					**X**	Additional communications meetings as needed
Real-time telephone support					**X**	

NKI - Your Standards/IP Experts

- We PROTECT clients' interests with a broadly experienced and diverse group of industry experts that keep client companies abreast of the ever changing marketplace.
- We COORDINATE the time consuming and often confusing process of: participating in standards meetings/voting, internally communicating ballots and their potential changes, and compiling concise summaries & strategic actions required for future growth.
- We SAVE clients' significant and valuable resources which facilitates their application to more company centric activities.
- We ENSURE clients' lead beyond competitors by "standardizing" the IP/Designs/Standards process - forcing competitors to "play catch-up" to your market leadership.

NKI Standard/IP Experts

	Activity	Active Years	Highest Position
Rick Adams	**Automotive Electronic Council**	12	Founding Member
	Semiconductor Assembly Council	10	Chairman of the Board
	JEDEC JC14.1, Reliability Test Methods	20	Sr Member
	JEDEC JC14.3, Silicon Device Qualification Methods	20	Sr Member
	JEDEC/EIAJ US/Japan Joint Reliability Standards Meeting	6	USA Delegate
Mark Bird	**JEDEC Board of Directors**	10	Vice-Chair
	JEDEC JC-11 Mechanical (Package Outlines) Standardization	30	Chair
	JEDEC JC-11.1 Design Requirements	30	Chair
	JEDEC JC-11.4 Uncased Devices	30	Chair
	JEDEC JC-11.7 IEC Interface	30	Chair
	JEDEC JC-11.11 Microelectronic Plastic Packages	30	Chair
	JEDEC JC-11.14 Microelectronic Assemblies	30	Chair
	JEDEC JC-13 Government Liaison	10	Chair
	JEDEC JC-13.1 Discrete Devices	10	Chair
	JEDEC JC-13.2 Microelectronic Devices	10	Chair
	JEDEC JC-14 Quality and Reliability of Products	15	Vice-Chair
	JEDEC JC-14.1 Reliability Test Methods for Packaged Devices	15	Vice-Chair
	JEDEC JC-14.3 Silicon Devices Reliability Qualification and Monitoring	15	Vice-Chair
	JEDEC JC-14.4 Quality Processes and Methods	15	Vice-Chair
	JEDEC-EIAJ, US/Japan Joint Reliability and Packaging Outline Standards Meeting	20	USA Chair
	IEC TC47, TC47A, TC47D International Semiconductor Standards	15	USA Delegate
	IPC-JEDEC Joint Standards on Moisture, Solderability, and Plating	10	JEDEC Delegate
	Semiconductor Assembly and Packaging Roadmaps for Jisso, ITRS, IPC, and INEMI	10	USA Chapter Chair
	Member of the SMTA Technical Committee and Surface Mount Council	10	Vice Chair

NKI Standard/IP Experts- continued

	Activity	Active Years	Highest Position
Chris Brigham	**JEDEC JC-14 Quality and Reliability of Products**	20	Sr Member
	JEDEC JC-14.1 Reliability Test Methods for Packaged Devices	20	Vice Chair
	JEDEC JC-14.3 Silicon Devices Reliability Qualification and Monitoring	18	Vice Chair
	JEDEC JC-14.4 Quality Processes and Methods	6	Vice Chair
	JEDEC JC-14.7 Gallium Arsenide Reliability and Quality Standards	3	Sr Member
	JEDEC/EIAJ US/Japan Joint Reliability Standards Meeting	8	Delegate
	JEDEC JC-13 Government Liaison	7	Sr Member
	JEDEC JC-13.1 Discrete Devices	2	Sr Member
	JEDEC JC-13.2 Microelectronic Devices	5	Sr Member
	IPC-JEDEC Joint Standards on Moisture, Solderability, and Plating	8	JEDEC Delegate
	Semiconductor Assembly Council	10	Sr. Member
Matt Doty	JEDEC JC-13.1 Discrete Devices	3	Sr Member
	JEDEC JC-13.2 Microelectronic Devices	3	Sr Member
	JEDEC JC-13.4 Radiation Hardness	3	Sr Member
	JEDEC JC-14 Quality and Reliability of Products	6	Vice Chair
	JEDEC JC-14.1 Reliability Test Methods for Packaged Devices	10	Chair, Vice Chair
	JEDEC JC-14.2 Wafer Level Reliability	3	Sr Member
	JEDEC JC-14.3 Silicon Devices Reliability Qualification and Monitoring	10	Chair, Vice Chair
	IPC-JEDEC Joint Standards on Moisture, Solderability, and Plating	4	JEDEC Delegate
	JEDEC/EIAJ US/Japan Joint Reliability Standards Meeting	6	USA Delegate
	IEC TC47 WG2, International Reliability Standards	4	USA Delegate