TI DSP LEADERSHIP STRATEGY

(Investment Role)

Leon Adams

Director, DSP Strategic Marketing & Business Development

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# TI DSP Leadership Strategy Agenda

- **DSP Market & TI Org Stratification**

- **TI DSP Strategic Principles & Platforms**

- **Realigning TI to DSP & Analog**

    - **Divestitures**

    - **Acquisitions**

    - **Investments**

- **Summary**

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DSP Market Stratification

Total DSP Market

65% of TAM	10s	Volume End-Equipments
25% of TAM	100s	Emerging Applications
10% of TAM	10,000s	Mass Market

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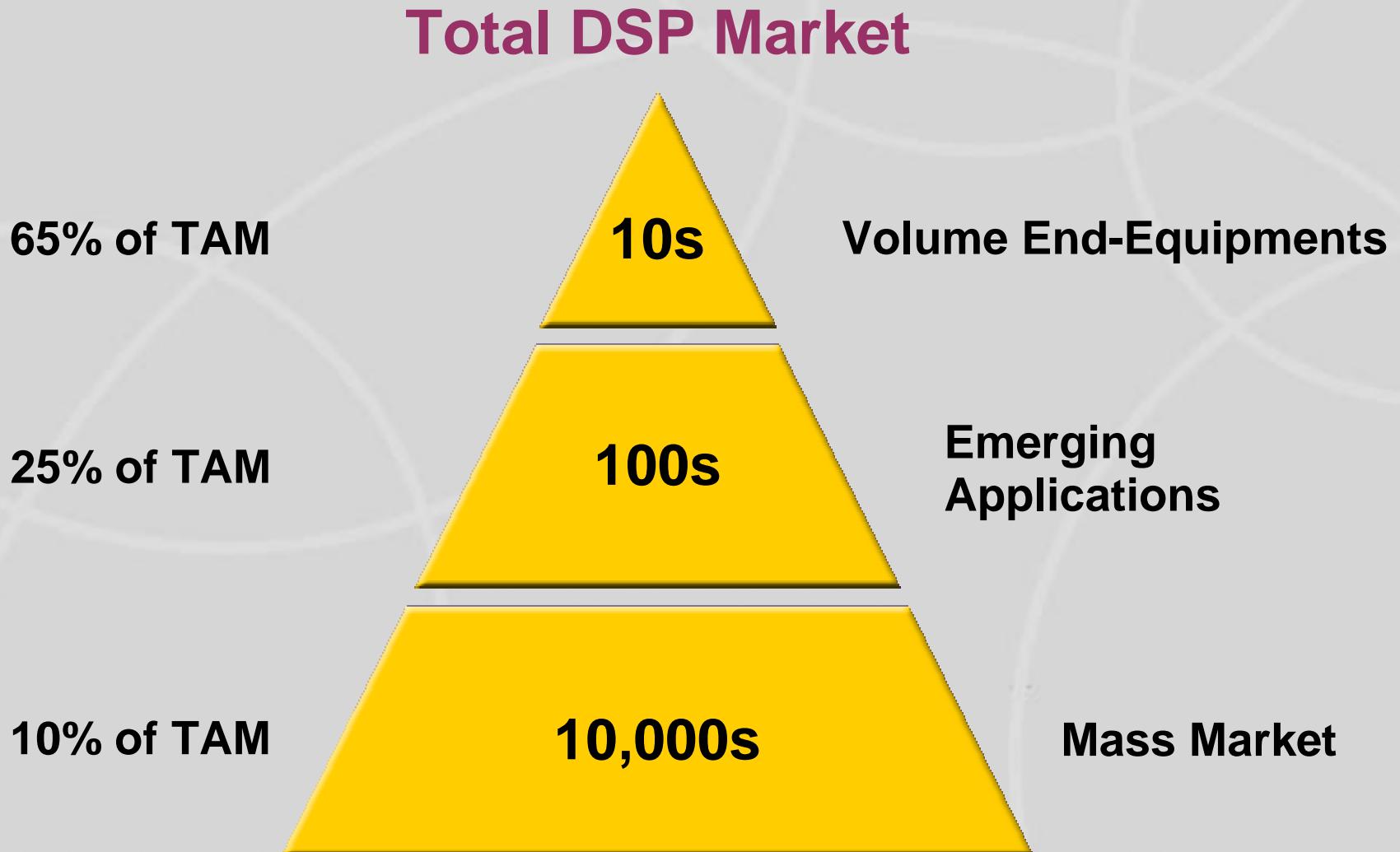
DSP Organization Stratification

Total DSP Market

65% of TAM — Verticals

Wireless
Storage
Broadband= DSL, Cable, VoIP

25% of TAM — Emerging Markets

Internet Audio
Digital Camera
Imaging
Motor control
etc.

10% of TAM — Catalog

Communications
Instrumentation
Entertainment
Medical

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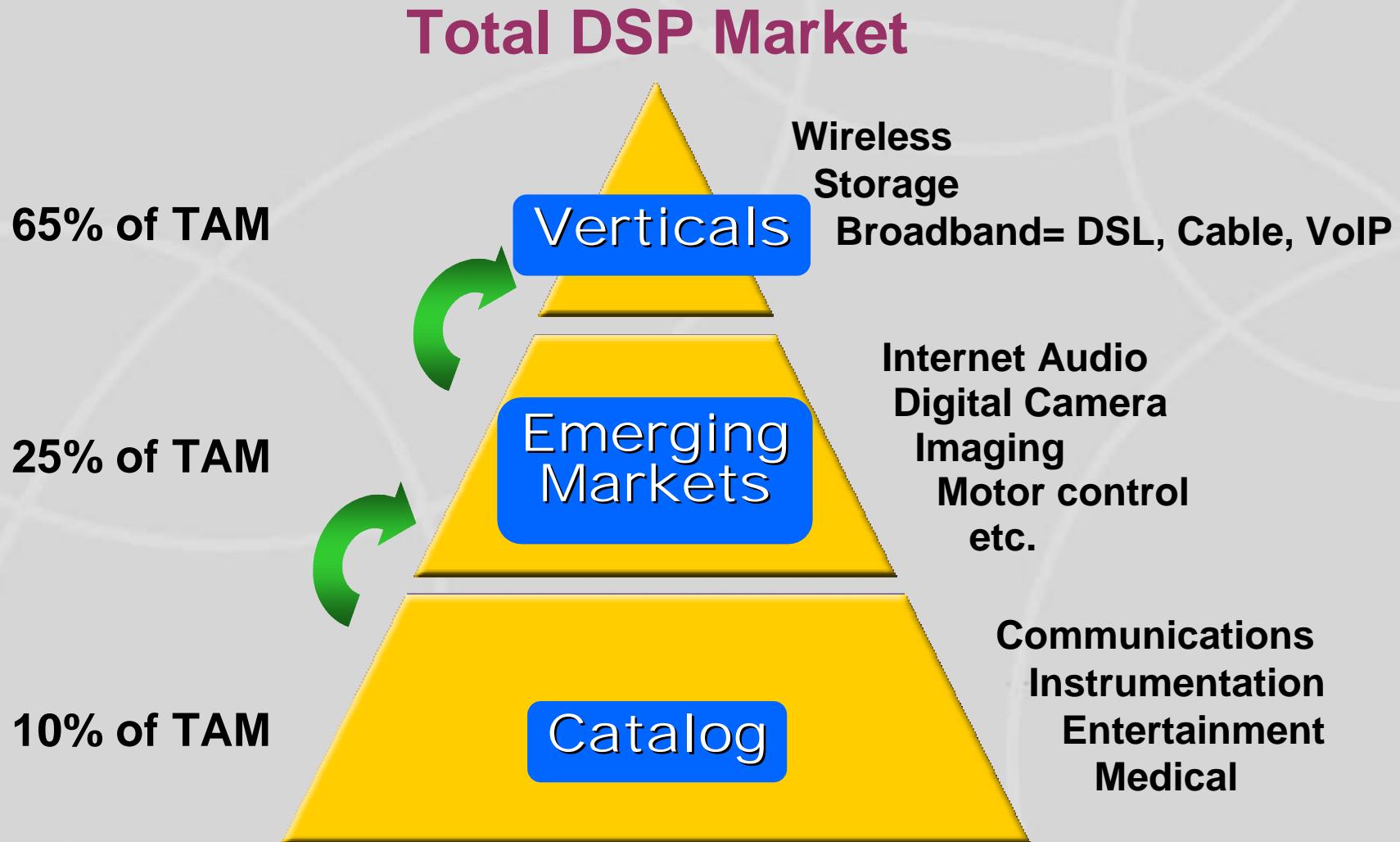
TI DSP Guiding Strategic Principles

Programmable DSP
- Highest Performance
- Lowest Power
- Cost Effective
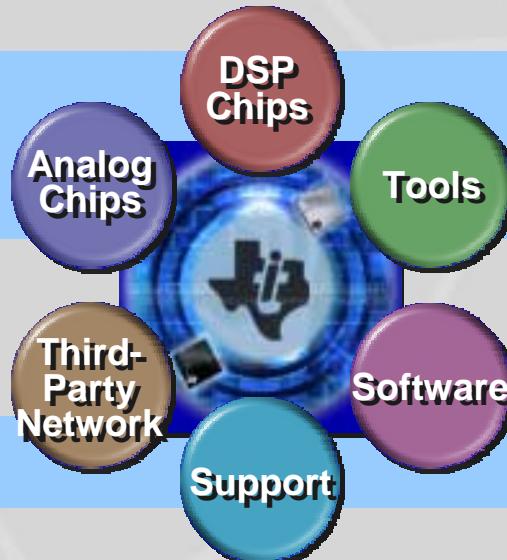
Flexible, Fast, Scalable for Innovation

Software Compatibility

Reuse, Make/Buy Options

Fast Time to Market

Best SW Dev Tools

Ease of Use, Powerful

DSP "Attached" Analog

Catalog & Vertical Solutions

Manufacturing Muscle

Fast Time to Volume, Cost-effective

Drive New Markets

Achieve #1 or 2 in Segment

Focus & Leadership Action

Know/Learn What it Takes
Do What it Takes to Lead

Third Parties & Universities

Broad Value "Adding" Web

DSP Chips · Tools · Software · Support · Third-Party Network · Analog Chips

TI TMS320™ DSP Platforms

DSPS Fest 2000

| Wireless | Broadband | Storage Products | Catalog Products | Emerging End Equipments |

eXpressDSP™ Real-Time Software Technology

C2000™ DSP

Motor Control DSP

C5000™ DSP

Personal DSP

C6000™ DSP

Broadband Infra-structure DSP

Leadership CMOS Process and Capacity

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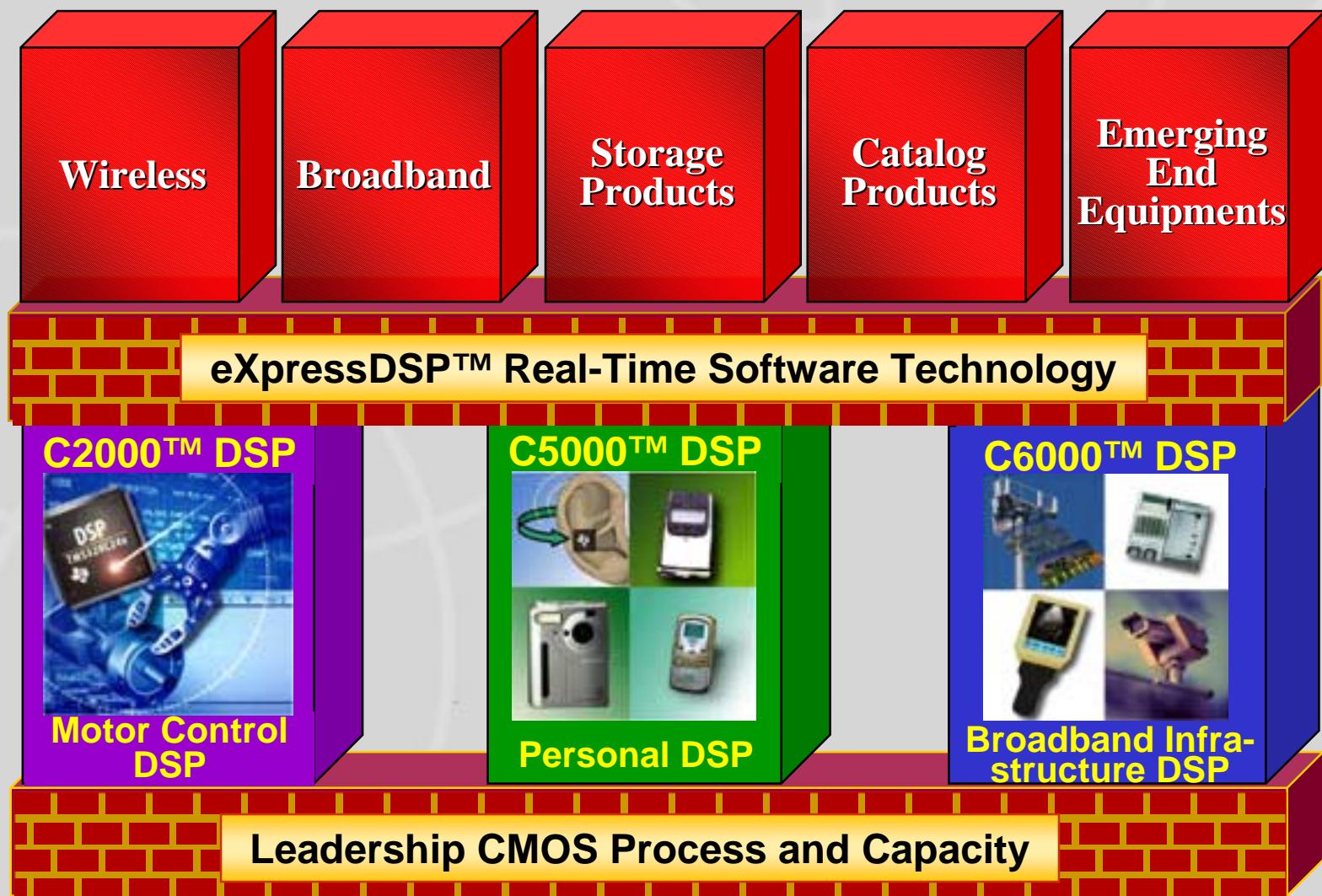
Realigning TI to DSP and Analog

Percent of Semiconductor Revenues

| | '95 | '96 | '97 | 2Q '98 |
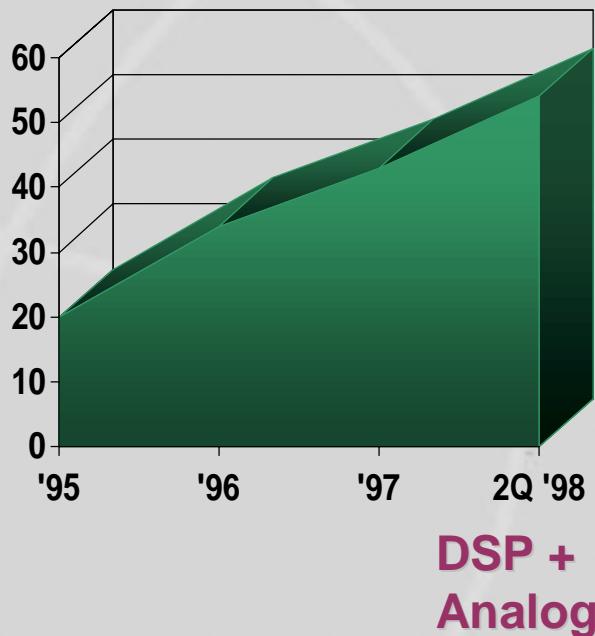
DSP + Analog

Start by stopping . . .

Divestitures
Billions of $$$$

- Defense Systems

- Memory Products

- Notebook Computer

- Printers

- Telecom Systems

- Contract Manufacturing

- Enterprise Software

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Strategic Alternatives: Make, Buy, Partner

DSPS Fest 2000

MAKE
TI Businesses

TI Development
TI Manufacture
TI Market

PARTNER
TI DSP 3rd Parties

Joint Development
Joint Market
Minority Share Invest

BUY
Other SC Company or 3rd Party

Subcontract Development

Acquire

NATURAL STRENGTHS

Chips	+++
Tools	+++
Software	++
Systems	+

NATURAL STRENGTHS

Chips	+
Tools	++
Software	+++
Systems	+++

**Add Complements
To Achieve Best in Class**
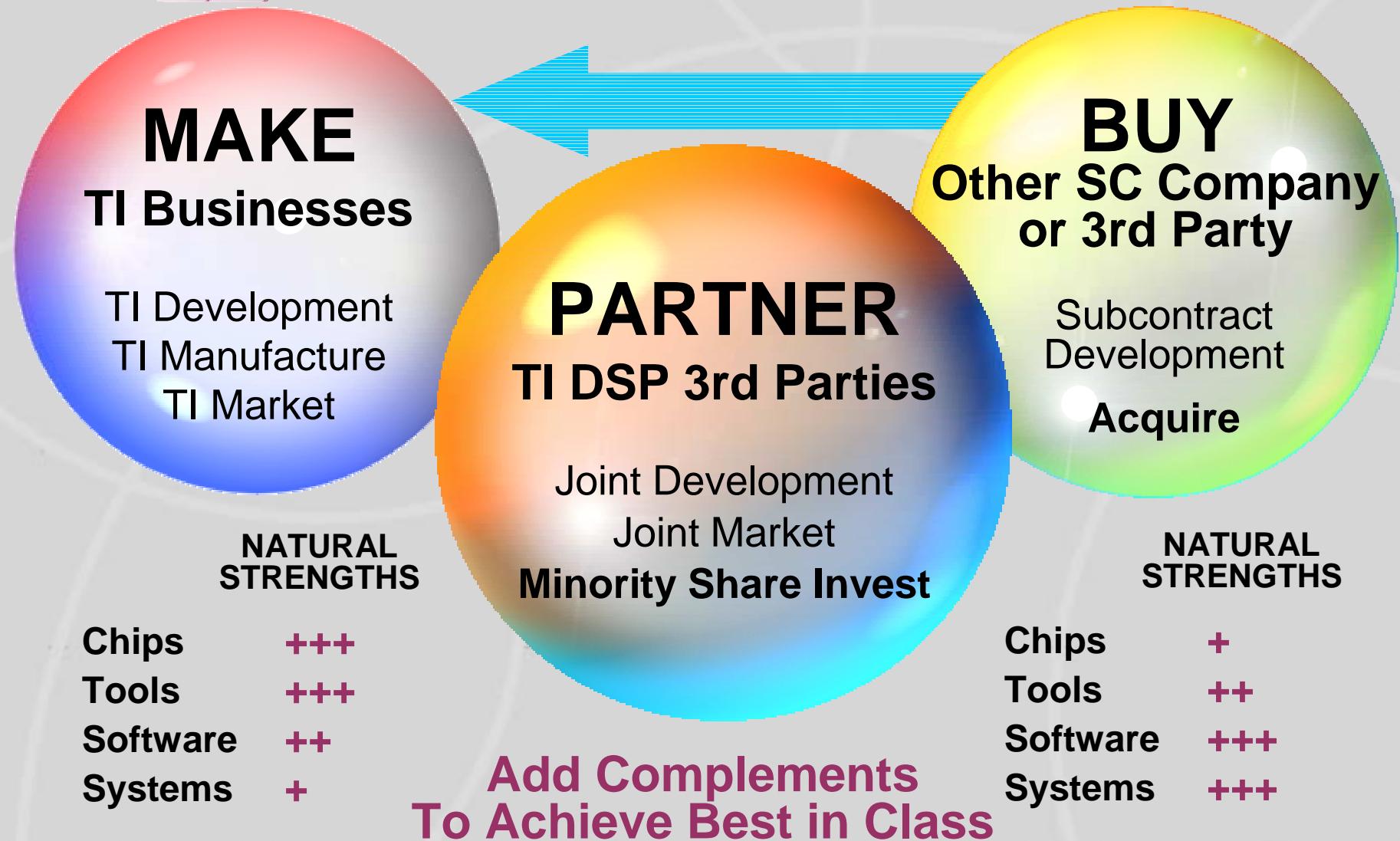
TI DSP & Analog Strategic Acquisitions

1996 - 1998

DATE	COMPANY	TECHNOLOGY	EXPERTISE
1996	**Silicon Systems Inc.**	• **Vertical-Storage**	• **Analog-Read Channel**
03/96	**Tartan Labs**	• **SW Tools**	• **IDE & Debug**
02/97	**Arisix/Oasix**	• **Vertical-Storage**	• **Systems**
11/97	**Intersect Technologies**	• **Vertical-Storage**	• **Firmware**
11/97	**Amati Comms**	• **Vertical-Broadband**	• **xDSL System & SW**
12/97	**Go DSP**	• **SW Tools**	• **Graphical IDE, Debugger**
01/98	**Spectron Microsystems**	• **SW Tools**	• **DSP BIOS / RTOS**
01/98	**Adaptec**	• **Vertical-Storage**	• **Systems**

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TI DSP & Analog Strategic Acquisitions

1999 – 2000 YTD

DATE	COMPANY	TECHNOLOGY	EXPERTISE
01/99	**Butterfly VLSI, Ltd.**	• **Vertical-Wireless**	• **Bluetooth, etc.**
06/99	**Telogy Networks**	• **Emerging/Vertical-Broadband**	• **VoIP SW & Systems**
06/99	**ATL Research**	• **Vertical-Wireless**	• **Wireless RF**
06/99	**Libit Signal Processing Ltd**	• **Emerging/Vertical-Broadband**	• **Cable Modems**
10/99	**Unitrode**	• **Analog**	• **Power Supply/Battery Mgt**
10/99	**Power Trends**	• **Analog**	• **Power Management**
06/00	**Dot Wireless**	• **Wireless**	• **3G CDMA Wireless**
06/00	**Alantro Communications**	• **Vertical/Broadband**	• **802.11 Wireless LAN**
07/00	**Burr-Brown**	• **Analog**	• **High Perf Data Converters, Amps, Pwr Mgt**

Realigning TI
DSP and Analog Acquisitions

Wireless

- Butterfly
- Dot Wireless
- ATL Research

Broadband

- Amati
- Libit
- Telogy
- Alantro

DSP Software Tools

- Go DSP
- Spectron
- Tartan

Storage

- SSi
- Intersect
- Arisix/Oasix
- Adaptec

Analog Catalog

- Unitrode
- Power Trends
- Burr Brown

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Example: eXpressDSP™ Software Technology

Code Composer Studio

GO DSP, TI, Tartan

DSP/BIOS II

Spectron

TMS320™ DSP Algorithm Standard

Spectron, TI

Third Party Network

TI
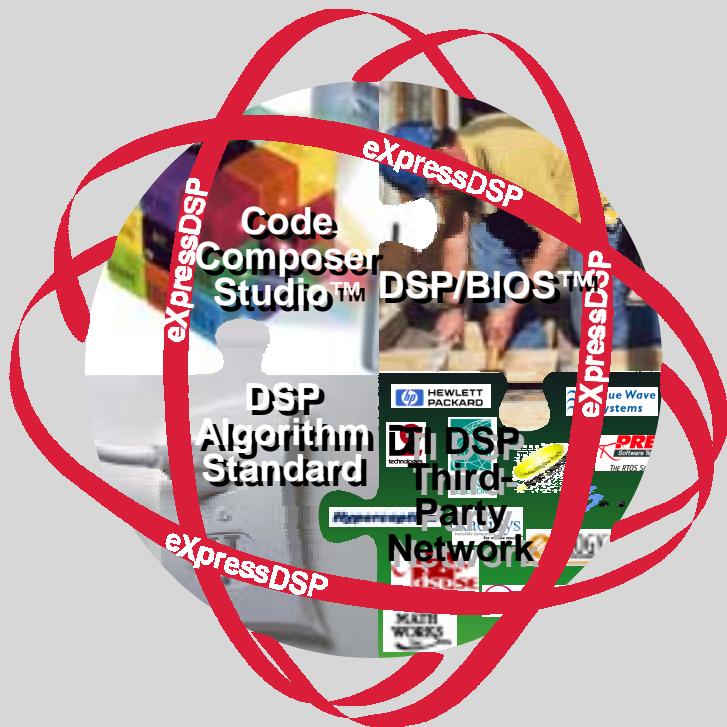
TI Offers Complete Cable Modem Solution

Leading Voice Software

High-Performance Power-Efficient DSPs

DOCSIS* Certified Technologies
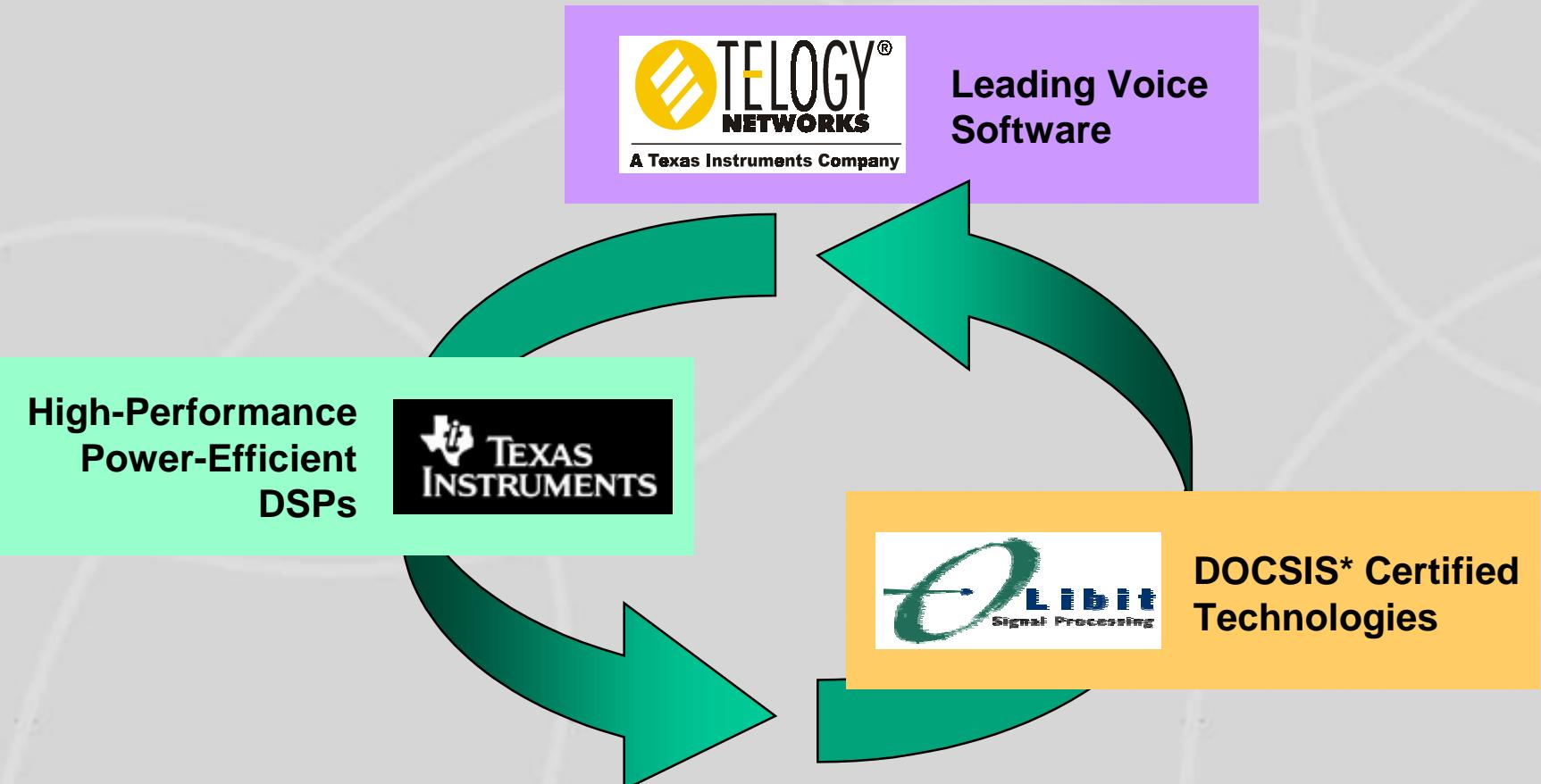
*DOCSIS - Data Over Cable Service Interface Specification

Realigning TI
DSP Strategic Investments (Areas)

- **DSP Software**

  - Comm SW : C5000

  - Comm SW : C6000

- **Emerging Markets**

  - Digital Radio

- **DSP Catalog**

  - Development

- **Broadband**

  - Cable Modem

Investment & Acquisition Fit into TI DSP Strategy

- **I & A: Tool in the Strategic Tool Box**

  - Related to products, talents, and Intellectual Property Rights (IP)
  - Alternative to TI creating/growing our own based on:
    - Market/Technology Targets/Priorities Alignment
    - Product Competitive Advantage and Time to Market
    - IP Value and Ownership leverage
  - Complex cost/benefit tradeoff with these challenges:
    - Cost of Investment/Valuation of Company
    - Cost of Ongoing Operations
    - Culture Integration, Talent Retention
    - Finance/Logistics

- **We look for**

  - Leadership in emerging micro-vertical markets/applications
  - Leadership in key horizontal "foundation" technology
  - Complementary fit to TI needs/business

- **I & A is the Exception, not the Rule**

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Two Types of Investing from TI

- **TI Ventures (H&Q): Financial**

    - TI Ventures is a worldwide venture capital fund established in 1996 by TI and [H&Q Venture Associates](#) to invest in early-stage technology companies focused on software infrastructure and hardware applications that leverage DSP and other related technologies.

    - **Focus**: FINANCIAL ROI via EQUITY APPRECIATION

    - **Contact: www.ti.com/corp/docs/ventures** *(Madison Pedigo)*

- **TI DSP Product Group: Strategic**

    - *"To accelerate revenue growth and competitive advantage of a profitable programmable TI DSP based business and supporting value web via procuring leadership in 1.emerging micro-vertical markets/ applications or 2.key foundation technology"*

    - **Focus:** STRATEGIC leverage to GROW TI DSP REVENUE

    - **Contact:** TI DSP Team; *Leon Adams*

What Strategic Investment T's & C's Does TI Expect ?

- ✓ **Strategic Alignment value is clear to TI**
  - ✓ Leader in emerging market micro-vertical or key horizontal technology
- ✓ **Typical Max 15% initial invest with fixed rate warrants up to 19%.**
- ✓ **No fiduciary responsibility**
- ✓ **Reasonable valuation/standard models**
- ✓ **Board observer seat**
- ✓ **First Right of Refusal on takeover bids (if any)**
- ✓ **Shareholders agreement (legally binding document)**
- ✓ **To be early on information/opportunities and feedback listened to**
- ✓ **TI DSP to be your exclusive or priority DSP Platform.**

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TI Leadership Strategy Summary

- **DSP Market & TI Org Stratification**
  - **Verticals, Catalog, Emerging Markets**

- **TI DSP Strategic Principles & Platforms**
  - **Programmable DSP, Software compatibility, Best tools, Analog Attach, Focus & Leadership, 3rd Parties & Universities**

- **Realigning TI to DSP & Analog**
  - **Divestitures: Stops for Focus**
  - **Acquisitions: Solution complements for Best**
  - **Investments: Partnering in emerging markets/technology**