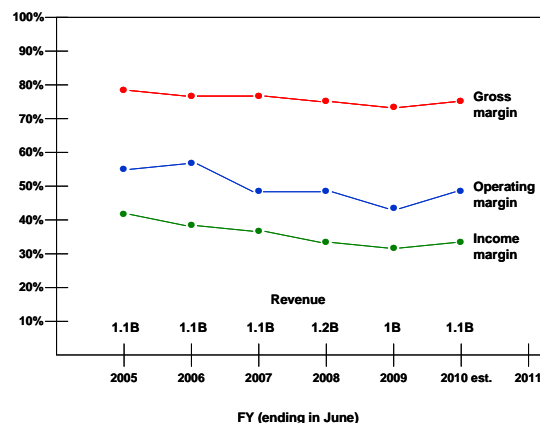
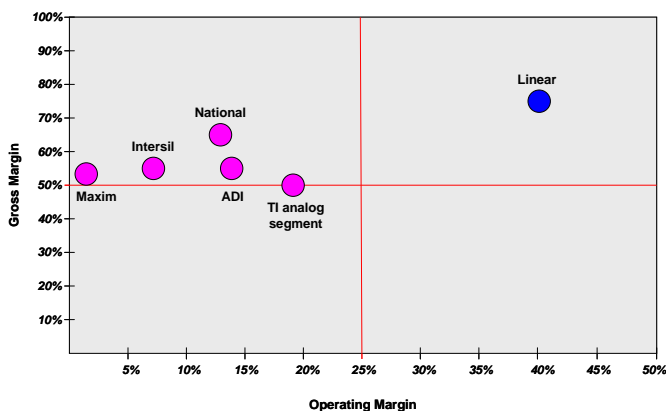


LINEAR TECHNOLOGY— POWER MANAGEMENT STRATEGY

ABSTRACT

This report (74 pages, 43 figures) delivers an in-depth and comprehensive analysis of Linear's power management strategy – its businesses, markets, products, and technologies.

Linear is a unique analog IC vendor – its pure-play profit-driven strategy distinctly separates Linear from its competitors. Its unprecedented and consistent financial performance makes Linear [the gold standard of the analog IC industry](#).



The company's gross, operating, and net income margins have remained unsurpassed in the analog IC industry for decades. The report reveals how Linear achieves industry record profitability while increasingly focusing on the power management business segment.

Power management represents more than one-half of Linear's total \$1.1 B revenues in FY10 (June 2010), placing it third ranked in terms of revenues after TI and National. At the current revenue growth rate Linear could displace National as the second ranked power management player. Power management plays an increasing strategic role in Linear's business; this indicates that the power management business harbors profit-rich market opportunities.

This report demonstrates that Linear is a proven measure of analog IC high value versus commoditization -- its participation is an excellent indication of the boundary dynamics between high performance and commodity analog ICs. The company has consistently anticipated industry trends well ahead of its competition; its historic record indicates impeccable timing of target market entries and exits, to reap profits and to avoid commoditization, respectively.

In its target end-market segments Linear outmaneuvers its competitors at the product level along three dimensions:

- Superior analog performance
- Enhanced application enablement
- Higher affordability (total cost of ownership)

This enables the company to exploit a product-specific market opportunity on top of competitors' established or emerging market positions. Linear exploits such a market opportunity as long as it yields the target profit margins; it abandons it when competitors start its commoditization. The report reveals the company's new market entries as well as areas of reduced business emphasis.

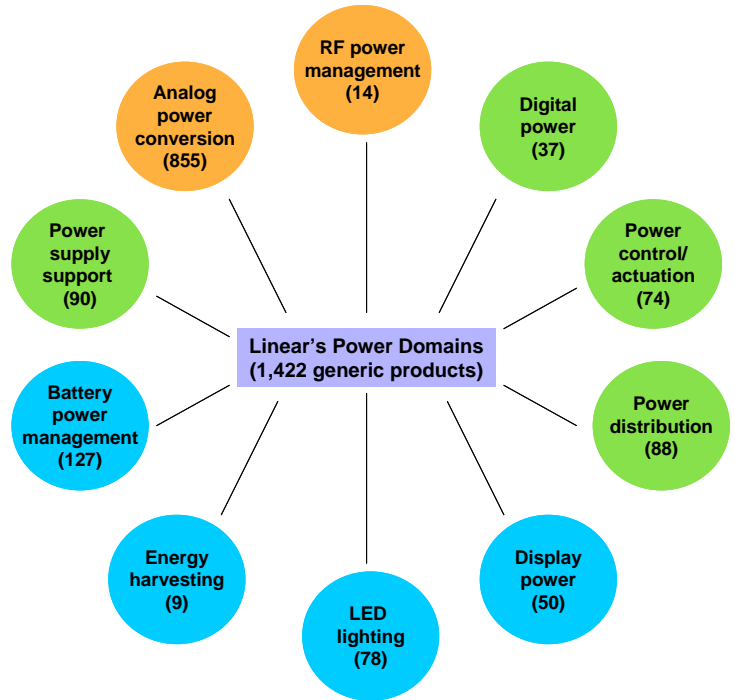
Major product category	Number of generic products		
	FY07	FY10	Change
Switching regulators	466	636	36%
Linear regulators	56	72	29%
Charge pumps	63	49	(29%)
MicroModules	9	32	356%
Multifunction regulators	24	30	25%
Battery chargers	88	127	44%
Hot plug controllers	36	70	94%
System monitors/controllers	66	14	(471%)
Power controllers/actuators	35	74	211%

Linear avoids system-level functional integration; instead it focuses on plug-in modules (MicroModules), which in terms of profitability are superior to on-chip functional integration. These products integrate a system's analog periphery IC functions with discretely such as power MOSFETs, inductors and capacitors. The plug-in module represent Linear's highest growth rate product category. Since FY07 Linear has increased its module product portfolio by more than three times. Currently offered power modules include point-of-load (POL) DC/DC regulators and a recently introduced LED driver module.

This report analyzes Linear's recent areas of market entry, for example, ambient energy harvesting (vibration, thermal, solar, and lamp light), supercapacitor chargers, and PMBus compliant digital power managers. Energy harvesting power supplies are targeted at smart wireless sensors in networks (mesh networks) as well as industrial automation and building HVAC systems. Supercapacitor chargers replace batteries as a low cost alternative for battery backup energy sources. PMBus compliant digital managers provide a superior solution (vs. analog alternatives) for managing point-of-load (POL) analog power supplies in complex high reliability power systems.

In this report all of Linear's power management products (about 1,422) are segmented into [ten power domains](#):

- Analog power conversion -- includes about 60 percent of total power management products and represents about 55 percent of total power management revenues. Building block switching regulators dominate this power domain by representing about 74 percent of the domain's products
- LED lighting -- highest growth business and a major business thrust area
- Energy harvesting—a recent market entry
- RF power management – a de-emphasized product area in tune with Linear's exit from the handset business
- Battery power management -- focus on battery chargers and integrated battery charging PMICs
- Power distribution – focus on hot plug controllers, and power-over-Ethernet (PoE) products
- Power control/actuation – non-regulated power ICs with a focus on power drivers and switches
- Power supply support -- voltage supervisors/monitors, supercapacitor chargers (a new market entry), and voltage references



The report analyzes each power domain in terms of product segments and number of products, business trends, and revenues. For each domain the report reveals the entry and exit dynamics of the presented market and product opportunities in order to sustain Linear's target profitability targets.

Linear's power management product portfolio features a 70/30 split between general-purpose and application-specific products. General-purpose products are the company's business focus, while application-specific products are targeted selectively in two end-market segments: computing and high-end consumer. Handsets represent only about two per cent of FY10 revenues; Linear has effectively exited this business. In addition, the company has also de-emphasized the high-end consumer business which in FY10 represents about six percent of revenues. Linear's handsets and

high-end consumer business represented about 20 percent of total revenues in FY05 vs. about 8 percent in FY10.

End-market sector	Major applications	Revenue Stream by End-Market								Revenue stream attributes
		2007		2008		2009		2010 est.		
		\$M	%	\$M	%	\$M	%	\$M	%	
Industrial	Automation Medical Security Other (1)	368	34%	376	32%	359	37%	399	35%	Main business focus Annuity revenue layer
Computing	Notebook/PDA Desktop, server Storage Display	130	12%	141	12%	116	12%	194	17%	Opportunistic revenue layer
Communications	High-end phones Cell base station Router	379	35%	399	34%	281	59%	274	24%	Main business focus Annuity revenue layer Highly selective in handsets
High-end consumer	MP3 player Digital still camera	98	9%	82	7%	87	9%	68	6%	Opportunistic revenue layer
Automotive	High performance	76	7%	118	10%	78	8%	126	11%	Main business focus
Space level	Satellite	32	3%	59	5%	48	5%	82	7%	Annuity revenue layer
Total		1,083	100%	1,175	100%	969	100%	1,141	100%	—

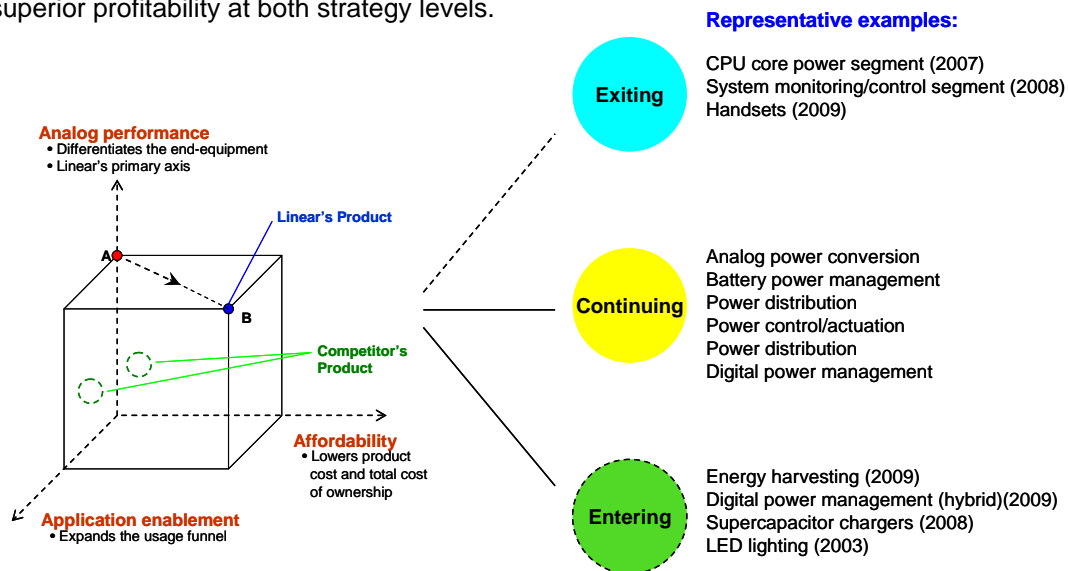
1. Includes: environment/building control, power supplies, test and measurement, industrial motor control, and laboratory

Linear derives about three-quarters of its revenues from industrial, automotive, space level, and communications and networking infrastructure market segments. These revenue streams represent the company's **profit-rich annuity foundation revenue layer**. The computer segment currently remains the main source of opportunistic revenues layered on top of the foundation layer. Hence, Linear's revenue stream features a balanced 75/25 percent structure of annuity and opportunistic revenue streams. This revenue structure mirrors the company's 70/30 percent split among general-purpose and application-specific power management products. The current market recovery favors such a revenue stream structure resulting in a 20 percent power management revenue growth to about \$662M in FY10.

Linear's power management business strategy evolves at two levels:

- Well timed entries and exits into and from target end-markets and applications, and
- Superior proprietary products optimized for those target applications

This report provides insights into the company's business model attributes and how they relate to its superior profitability at both strategy levels.



Products:

- Profit optimized for target applications
- Pivoting role of design know-how

Target end-market segments:

- High profit potential
- Growth markets
- Linear's business fit

LINEAR TECHNOLOGY— POWER MANAGEMENT STRATEGY

TABLE of CONTENTS (74 pages, 43 figures)

- 1 INTRODUCTION**
- 2 KEY FINDINGS** (Findings 1 to 13)
- 3 BUSINESS and STRATEGY**
 - 3.1 Linear's Profit Driven Business Strategy
 - 3.2 Business Structure and Attributes
 - 3.3 Linear's Power Management Strategy Blueprint
 - 3.4 Revenues and Trends by End-Market Segment (FY09 – FY10)
 - 3.5 Ten Linear's Power Domains—The Big Picture
 - 3.6 Revenues and Products by Power Domain (FY09-FY10)
- 4 PRODUCT SEGMENTATION vs. LINEAR BUSINESS STRATEGY**
 - 4.1 Power Management Product Segmentation—General-Purpose vs. Application-Specific
 - 4.2 Power Management Product Segmentation by Functional Content
- 5 ANALOG POWER CONVERSION DOMAIN**
 - 5.1 Switching Regulators
 - 5.2 Linear Regulators
 - 5.3 Charge Pumps
 - 5.4 Ultralow Noise Regulators
 - 5.5 Multifunction Regulators
 - 5.6 MicroModules
 - 5.7 DDR Memory/Bus Termination
 - 5.8 Xenon Photoflash Chargers
- 6 LED LIGHTING and DISPLAY POWER DOMAINS**
 - 6.1 LED Lighting Domain
 - 6.1.1 MicroModule LED Drivers
 - 6.1.2 Multichannel LED Drivers for Large LCD Displays
 - 6.1.3 Multidisplay LED Drivers
 - 6.1.4 Flash/Torch LED Drivers
 - 6.1.5 General-Purpose Charge Pump LED Drivers
 - 6.1.6 General-Purpose Inductor Based LED Drivers
 - 6.2 Display Power Domain
- 7 ENERGY HARVESTING and DIGITAL POWER DOMAINS**
 - 7.1 Energy Harvesting Domain
 - 7.1.1 Energy harvesting power conversion products
 - 7.2 Digital Power Domain
 - 7.2.1 Digital power management products

8 POWER CONTROL/ACTUATION and POWER DISTRIBUTION DOMAINS

- 8.1 Power Control/Actuation Domain
 - 8.1.1 Powerpath controllers/ideal diodes
 - 8.1.2 Power Drivers and Switches
 - 8.1.3 Offline Controllers/PFC and PWM Controllers
 - 8.1.4 Circuit Breakers and Overvoltage Protection ICs
 - 8.1.5 Piezo Microactuator Drivers
- 8.2 Power Distribution Domain
 - 6.4.1 Power-over-Ethernet (PoE) Products
 - 6.4.2 Hot Plug Controllers

9 BATTERY POWER MANAGEMENT DOMAIN

- 9.1 Standalone Battery Charger ICs
- 9.2 Integrated Battery Charger ICs
- 9.3 Gas Gauge and Multicell Monitor ICs

10 POWER SUPPLY SUPPORT and RF POWER MANAGEMENT DOMAINS

- 10.1 Power Support Domain
 - 10.1 System Supervisor, Monitor, and Control ICs
 - 10.2 Supercapacitor chargers
 - 10.3 Current Sources
 - 10.4 Voltage References
- 10.2 RF Power Management Domain

11 TECHNOLOGY and MANUFACTURING TRENDS

- 11.1 Wafer Fabrication Facilities
- 11.2 Assembly and Test Facilities
- 11.3 Manufacturing Outsourcing Trends
- 11.4 Manufacturing Capacity Status
- 11.5 Manufacturing Technology Portfolio

APPENDIX 1 – Analog ICs Market View

- 1 Analog IC Definition
- 2 Analog ICs Segmentation
- 3 General-Purpose Category
- 4 Application-Specific Category
- 5 Analog ICs Market Data (2008 to 2010)
- 6 Power ICs Market Data (2008 to 2010)

LIST OF FIGURES

- 3.1 Linear's Financial Trends (FY09 – FY10)
- 3.2 Analog market Landscape—Gross and Operating Margins (FY09)
- 3.3 Linear's Human Capital Pyramid (FY02-FY10)
- 3.4 Business Unit Alignment with End-Equipment Applications
- 3.5 Linear's Profit Driven Strategy Blueprint
- 3.6 Linear's Profit Driven Product Differentiation

- 3.7 Revenue Trends by End-Equipment Segment (FY09-FY10)
- 3.8 Ten Linear's Power Domains Products Overview
- 3.9 Ten Linear's Power Domains—Key Attributes and Trends
- 3.10 Power Management Revenues and Products by Power Domain (FY09-FY10)

- 4.1 Analog Products Segmentation—Standard Products
- 4.2 Power Management Products—General Purpose vs. Application Specific
- 4.3 Power Management Product Portfolio Trends
- 4.4 Integration Hierarchy of Linear's Power Products

- 5.1 Analog Power Conversion Domain Products Overview
- 5.2 6A Boost/Inverting DC/DC Converter (LT3579)
- 5.3 7.5A Low Dropout Positive Regulator (LT1083)
- 5.4 15A DC/DC MicroModule Regulator (LTM4611)
- 5.5 4A Buck DC/DC Converter (LTC3614)
- 5.6 High Voltage Capacitor Charger (LT3751)
- 5.7 Multifunction DC/DC Regulator (LT3507)

- 6.1 Linear's LED Lighting Domain Products Overview
- 6.2 MicroModule LED Driver (LTM8040)
- 6.3 High Voltage LED Driver (LT3956)
- 6.4 High Current 5-Output Regulator for Large TFT-LCD Panels (LT3513)

- 7.1 Linear's New Market Entry—Energy Harvesting Domain
- 7.2 Piezoelectric Energy Harvesting Power Supply (LTC3588)
- 7.3 Linear's Digital Power Management Products Overview
- 7.4 Digital Power Supply Manager (LTC2978)

- 8.1 Linear's power Control/Actuation Domain Products overview
- 8.2 Ideal Diode Controller (LTC4358)
- 8.3 Power Distribution Domain products Overview
- 8.4 Low Voltage Hot plug Controller for Advanced Mezzanine Card (LTC 4223)

- 9.1 Battery Power Management Products Overview
- 9.2 Highly Integrated Portable Product PMIC (LTC3677-3)

- 10.1 Power Supply Support Domain Products Overview
- 10.2 Programmable Supercapacitor Charger (LTC4425)
- 10.3 RF Power Amplifier Controller (LTC4402)

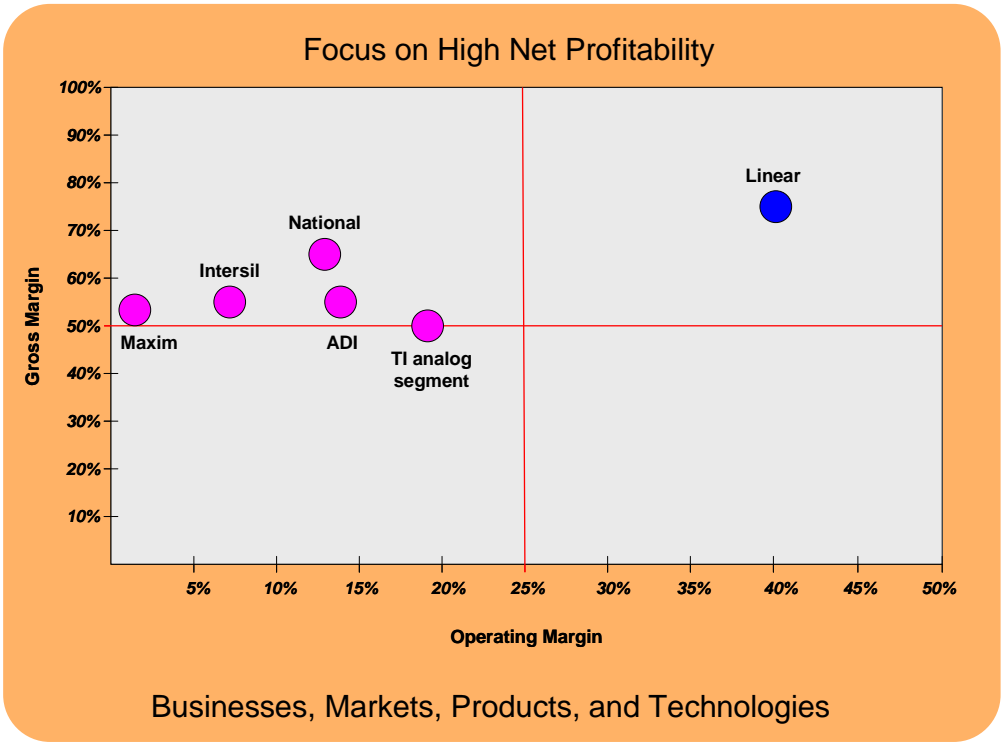
- 11.1 Manufacturing Environment
- 11.2 Foundation Fabrication Processes
- 11.3 Fabrication Processes by Major Product Type

Appendix

- A1 Analog ICs Market Trends (WSTS, PG)
- A2 Power ICs Market View (PG)

Linear Technology

Power Management Strategy



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