

# Some Issues of the Management of Technology (MOT) in the Technology - Based Service Sector

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# Goods Sector

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Well-characterized and well-understood

- Manufacturing
- Agriculture
- Construction
- Extraction

# Service Sector

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## CHIPS

- Coproduction
- Heterogeneity
- Intangible
- Perishable
- Simultaneity

## DIP

- Delivery
- Infrastructure
- Product

# Approach

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- Analyze and interpret readily available data bases
- Use Data Surface Mining (DSM)

# 25 Breakout Companies



Company	Services	Goods	Company	Services	Goods
Intellifit		X	Khimetrics	X	
Sling Media		X	Cypak		X
SigmaTel		X	WholeSecurity	X	
Crucell	X		Stirling Energy Systems		X
GoTV Network	X		Orchestria	X	
AuthenTec		X	Mobile 365	X	
Scanbuy	X		XenSource	X	
Techfaith Wireless		X	Attensity	X	
InTech		X	Sirtris Pharmaceuticals		X
Aspen Aerogels		X	Bacterin		X
QuesTek		X	XDx		X
Odeo	X		IODA	X	
MDA		X	<b>TOTAL</b>	<b>11</b>	<b>14</b>

**Adapted from Fortune, May 16, 2005**  
 ( Additional Classification by the Authors)

# Top 20 Innovative Companies in the World



Company	Services	Goods	Company	Services	Goods
Apple		X	Samsung		X
3M		X	Wal-Mart	X	
Microsoft	X		Toyota		X
GE		X	eBay	X	
Sony		X	Intel		X
Dell		X	Amazon	X	
IBM		X	Ideo	X	
Google	X		Starbucks	X	
P&G		X	BMW		X
Nokia		X			
Virgin	X		<b>Total</b>	<b>8</b>	<b>12</b>

**Adapted from BusinessWeek, August 1, 2005**  
 (Additional Classification by the Authors)

# The Search for Tomorrow



Company	Services	Goods	Company	Services	Goods
Applied Micro circuits		x	National Semiconductor		x
Biogen Idec		X	Adobe Systems	X	
PMC-Sierra	X		Microsoft	X	
Amgen		X	Comverse Technology		X
BMC Software	X		Analog Devices		X
Gilead Sciences		X	QLogic	X	
Ciena		X	LSI Logic		X
Advanced Micro Devices		X	Altera		X
Broadcom		X	Pfizer		X
GEzyme		X	Texas Instruments		X
Eli Lilly		X	Veritas Software	x	
Micron Technology		X	PeopleSoft	X	
Intel		X	EBay	X	
Chiron		X	Tellabs		X
Linear Technology		X			
Merck		X	<b>Total</b>	<b>8</b>	<b>22</b>

Adapted from **BusinessWeek**, October 11, 2004  
(Additional Classification by the Authors)

# Observations

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- Innovations appear to be purview of the goods sector
- Relative roles of intellectual property
- Patentability of physical vs. intangible items
- Roles of intellectual property of suppliers
- Non-exclusive utilization of supplier IP

# Implications for Technology Management

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- Differences
- Intellectual property
- Concentration on systems and organization
- Importance of social and cognitive science, or etc.
- Reusable assets
- Metrics of quality and productivity