

# ***Directed IP Development***

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*Creating More Valuable Patents*  
*Law Seminars International*  
San Francisco - March 16, 2005



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# What is “Directed IP Development”?

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The IP Development Spectrum extends

from “Traditional” R&D --

- IP is ancillary to (results from) product development

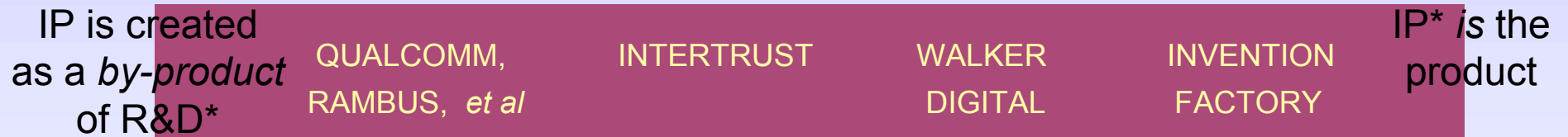
to “Pure” IP --

- IP is the (only) product

Compare:

Qualcomm, Rambus, Intertrust,  
Walker Digital, Invention Factory

# The IP Development Spectrum



(Note that technology companies often move to the right as they mature)

\* R&D includes Business Methods

\* IP includes know-how

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# *Other IP Factories - Past & Present*

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- Tessera, MIPS, ARM (began as chip product companies)
- Applied Minds (Danny Hillis, Glendale)
- Invent Resources (Richard Pavelle, Boston)
- Interval Research (Paul Allen, Silicon Valley)
- Deka R&D (Dean Kamen, Manchester, NH)
- Sarcos Research (Salt Lake City)
- Generics Group (Cambridge, England)

Typically, these companies have three operations units:  
R&D, IP licensing and customer support

# ***Strategic Objectives of Directed IP Development***

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## **1. Offensive Positioning**

Exclusion vs. Licensing

Focus is on IP relevant to emerging industry standards

Example: Intertrust

## **2. Defensive Positioning**

Cross-Licensing Potential

Focus is on IP relevant to competitors' activity

## **3. Acquisition Target Positioning**

Focus is on IP relevant to competitors of prospective acquiror(s)

Example: Intertrust

# ***Strategic Objectives of Directed IP Development***

(continued)

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## **4. Creation/Acceleration of Markets for Core Products**

Examples:

National Semiconductor's *iPower* business unit -  
development of e-commerce and security  
applications for new crypto-processor chip

Intel -

“encouraging” development of computation-intensive  
software applications to promote market for next  
generation microprocessor (e.g., 3D Rendering)

# ***Strategic Objectives of Directed IP Development***

(continued)

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## **5. Development of IP in Complementary Product Market(s)**

**Example: Macintosh ---> iPod**

## **6. Solution of *Choke-Point* Technical Problems**

**Toll-Collector Model**

**Example: SIA Road Map “Red Bricks”**

## **7. Identifying, then occupying, *White Space* opportunities**

# Red Brick Example: ITRS Design Technology Metrics (1999)

Year Technology Node	1999 180 nm	2000	2001	2002 130 nm	2003	2004	2005 100 nm
MPU new design cycle (months)	36	36	36	32	32	32	30
MPU transistors per designer-month (300-person team) (thousand)	2	3	4	7	10	15	20
ASIC new design cycle (months)	12	12	12	12	12	12	12
ASIC transistors per designer-month (50-person team) (million)	0.3	0.4	0.5	0.7	1.0	1.3	1.8
Portion of verification by formal methods	15%	15%	15%	20%	20%	20%	30%
Portion of test covered by BIST	20%	20%	20%	30%	30%	30%	40%

*Solutions Exist*

*Solutions Being Pursued*

*No Known Solutions*



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# ***Outsourcing IP Development***

- **Hybrid Model between *Make* and *Buy* modes of IP acquisition**
- **Try-before-you-buy**
- **Advantages:**
  - **Access to world-class technical experts**
  - **Ability to pull-the-plug at various development milestones (or at will)**
  - **No internal corporate politics**
  - **No HR issues: client can either hire some or all team members - or terminate them without cause**

# ***Outsourcing IP Development***

(continued)

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- **IP Ownership/Payment Alternatives**

- Client engages, and compensates, outside expert consulting team to solve a particular technical problem set; client owns any and all IP (patent rights, know-how) created, whether or not project is completed.
  - Examples: National Semiconductor *iPower* group  
IPS Consulting
- Client identifies problem(s) to expert consulting team, but does not pay for efforts to solve; client gets an option to acquire/license any technology/IP developed.
  - Example: Invent Resources.

# ***Focused IP Accelerators***

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- Innovation Workshops
  - Technical experts are internal but outside *innovation facilitators* conduct group brainstorming sessions
  - Emphasizes cross-disciplinary/specialty interchanges
  - Focus is on creating patentable solutions
  - Examples: Vincent & Assoc., ICMG, Acorn, IP Capital

# Summary

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- Technology companies are increasingly looking beyond their own “R&D” to improve their IP position.
- Strategic objectives determine the *direction* of directed IP development.
- Outsourcing directed IP development can be an attractive alternative to internal development.
- Innovation Accelerator consultants can add IP value.
- The day of the *IP Factory* has arrived.