Converging Devices – Converging Technology – Converging Patents?

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0, the Finlandia House
Niklas Östman, Roschier
A Quote from Vladimir Lenin

“Trust is good, but control is better.”

Vladimir Lenin, a revolutionary
The Race for Patents

WIND ENERGY

25,000 MW
1,600 PATENTS

NEW INSTALLATION
(in megawatts)

1996-2007

SOLAR PHOTOVOLTAICS

4,000 MW
1,600 PATENTS

NEW PRODUCTION
(in megawatts)

1981-2007

SOURCE: CHATHAM HOUSE, CAMBRIDGE, WITH DATA FROM
GLOBAL WIND ENERGY COUNCIL AND WORLDBWACH INSTITUTE

The World is Spiky…. and Certainly Not Flat

Scientific publications

Patents

Source: Tim Gulden, UMD, Richard Florida, U of T, Pekka Himanen, HIIT
Convergence – Everything Meets in the Middle

Computing

Internet

Cellular / CE

Content

intel

Microsoft

Disney

SONY

vodafone

CISCO

vodafone

TimeWarner

ROSCHIER
## Characteristics of Certain Industries

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<th>Key Features</th>
<th>Control Points</th>
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<td>Cellular</td>
<td>Open standardization, frequency licenses</td>
<td>Brand, patents, logistics</td>
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<tr>
<td>Computing</td>
<td>Closed business models, proprietary architectures</td>
<td>Patents, interface control, logistics</td>
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<td>Content</td>
<td>Content aggregation, collecting societies</td>
<td>Copyright, brand, channels</td>
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<td>Internet</td>
<td>Open source, loose regulation, the “cloud”</td>
<td>Bandwidth, IP addresses, copyleft</td>
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Converging Products

Computing

Cellular / CE

Internet

Content
Converging Technologies
Converging Patents? Yes.

**Operating System:**
Symbian OS v9.2

**Developer Platform:**
S60 3rd Edition, Feature Pack 1

**Frequency Band:**
GSM 850, GSM 900, GSM 1800, GSM 1900, WCDMA 2100

**Display:**
Resolution: 240 x 320, Color Depth: 24 bit

**CPU:**
Dual CPU, CPU Type: ARM 11, CPU Clock Rate: 332 MHz, 3D Graphics HW Accelerator

**Memory:**
Max User Storage: 160 MB, NAND Memory: 256 MB, SDRAM Memory: 64 MB
~18 MB Free Executable RAM Memory, Memory Card: Micro SD

**Network Data Support:**
HSDPA, WCDMA, EGPRS, GPRS, HSCSD, CSD

**OMA Device Management:**
OMA Client Provisioning v1.1, OMA Device Management v1.1.2

**OMA Data Synchronization:**
OMA Data Synchronization v1.2

**Local Connectivity:**
Bluetooth 2.0 +EDR, Infrared, Mini Stereo Plug 3.5mm, Mini USB, Nokia Audio Visual Plug 3.5mm, UpnP, USB 2.0, WLAN, WLAN Support: 802.11b/g, WPA, WPA2 (AES/TKIP), Nokia VoIP 2.1

**Bluetooth Profiles:**
A2DP, AVRCP, BIP, BPP, DUN, FTP, GAVDP, GOEP, HFP, HSP, OPP, SAP

**Java Technology:**
MIDP 2.0, CLDC 1.1, JSR 135 Mobile Media API, JSR 172 Web Services API, JSR 177 Security and Trust Services API, JSR 179 Location API, JSR 180 SIP API, JSR 184 Mobile 3D Graphics API, JSR 185 JTWI, JSR 205 Wireless Messaging API, JSR 226 Scalable 2D Vector Graphics API, JSR 234 Advanced Multimedia Supplements, JSR 75 FileConnection and PIM API, JSR 82 Bluetooth API

**Nokia UI API**

**Browser:**
HTML over TCP/IP, S60 OSS Browser, WAP 2.0, XHTML over TCP/IP

**Example: 750+ patent families declared as essential for 2G GSM**

**Example: 1500+ patent families declared as essential for 3G WCDMA**
Converging Patents? Yes.

Flash Lite:
Flash Lite 2.0

Messaging:
MMS, MMS+SMIL, SMS

Email Protocol:
IMAP4, POP3, SMTP

Digital Rights Management:
OMA DRM Forward Lock, OMA DRM v1.0, OMA DRM v2.0, Windows Media DRM 10

DRM Delivery Method:
HTTP Download, MMS, OMA Download

Camera:
Resolution: 2582 x 1944, Sensor: CMOS 5.0 Megapixels, Focal length 5.6 mm, F-Stop/Aperture f/2.8
Focus range 10 cm to infinity, Digital Zoom: 20 x, Image Format: JPEG/Exif, Feature: Auto Focus, Carl Zeiss Optics, Flash, Red-Eye Reduction, Self Timer, Video Resolution: 640 x 480, Video Frame Rate: 30 fps, Video Zoom: 10 x, Video Format: H.263, MPEG-4

Secondary Camera:
Resolution: 320 x 240, Focal length 43 mm, F-Stop/Aperture f/2.8, Focus range 10 cm to infinity, Digital Zoom: 2 x, Image Format: JPEG/Exif, Video Resolution: 176 x 144, Video Frame Rate: 15 fps
Video Zoom: 2 x, Video Format: H.263

Video Features:
Video Call, Video Editor, Video Player, Video Recorder, Video Sharing, Video Streaming

Video Formats:
3GPP formats (H.263), H.264/AVC, MPEG-4, RealVideo 7,8,9/10

Audio Features:
Audio Equalizer, Audio Recording AAC stereo, 48kHz, Audio Streaming, Music Player, Stereo

Audio Formats:
AAC, AAC+, eAAC, eAAC+, MP3, M4A, WMA, Mobile XMF, SP-MIDI, AMR (NB-AMR), MIDI Tones (poly 64), RealAudio 7,8,10, True tones (WB-AMR), WAV

Document Formats:
Excel, PDF, Powerpoint, Word, Zip

Graphics Formats:
BMP, EXIF, GIF87a, GIF89a, JPEG, JPEG 2000, PNG, WBMP

Extra Features:
Digital Recorder, GPS, OpenGL ES 1.1 Plugin, PoC (Push-to-talk over Cellular), Stereo FM Radio, Stereo Handsfree Speakers, Still Image Editor, SyncML, Themes, TV Out, Visual Radio

Keypad Description:
2 Labeled Soft Keys, 5-way Scrolling, Dedicated Media Keys, Side Key Mat

Example: a MUSD 440 settlement between InterTrust and MS

Example: a MUSD 1500 jury award for damages in a dispute between MS and AlcatelLucent
# The Pyramid of Control

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<td>Add-On Technologies (Cameras, audio etc.)</td>
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<td>Drivers and Connectivity</td>
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<td>Processor Architecture</td>
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Forecasting the Future

- Patents will remain an important control point, though perhaps less so than in some of the converging industries in the past
  - But, if anything, the complexity will only increase with convergence
- However, patents are not a true monopoly
  - Only a right to exclude the practice of the patented invention
  - Or, really, actually to try to do so before a court of law
  - Without providing the patent holder with the right to practice the invention (patents tend to be dependent on others)
- While content may become the ”new king”
  - Such content may be more and more user generated in the future
- What is certain, though, is that any importance lost by patents as a control point will be taken over by something else (no vacuum!)
Thank you!

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