

# **RFID developments**

**Ricky Purnell** [r.purnell@IDTechEx.com](mailto:r.purnell@IDTechEx.com)

**IDTechEx** [www.IDTechEx.com](http://www.IDTechEx.com)

**IDTechEx is an independent strategic analyst on **printed electronics, RFID and smart packaging**. Our core services provide:**

<b>Consultancy</b>	<b>Publications</b>	<b>Conferences</b>
<p>Clients include:</p> <p>Hewlett Packard            Shell Oil            Rexam            Whirlpool Europe            Guinness UDV            Thin Film Electronics            PolyTechnos            Cazenove investment            Schiphol Airport...</p>	<p><b>Independent market and technology research reports</b> covering printed electronics, RFID &amp; smart packaging topics</p> <p>Printed Electronics World daily</p> <p>RFID Analyst monthly.</p> <p>World's largest RFID case study knowledgebase</p>	<p>Global <b>Conferences</b>: USA, Europe and Asia</p> <p>Printed Electronics            RFID Smart Labels            Active RFID            Photovoltaics</p>

# Pure play independent RFID companies

\$50-\$100 million  
Allflex Australia  
Datang China  
ERG Australia  
ASK France

\$20-\$50 million Over 100 people

TAGSYS France  
AeroScout US/ Israel  
Alien Technology US  
ID Systems US  
Impinj US  
RSI ID US

Under \$20 million  
About 500 companies

BUT  
WATCH THE  
TIDDLERS!

# Cumulative sales in millions of tags

## 1943 - start of 2008

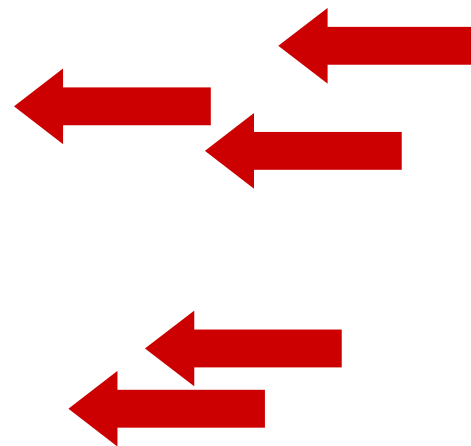
Application	Cumulative number of tags (millions)
Retail/ consumer goods	892 – pallets/cases, apparel, items
Land and sea logistics/ postal	67
Airlines and airports	90 – baggage, conveyances
Healthcare and drugs	105 – AstraZeneca, Pfizer, Purdue, GSK etc
Animals & farming	270
Books, libraries, archiving	328 – Libraries, Selexyz
Manufacturing	206 – process control
Leisure	151 – Hasbro toys, events
Laundry	80
Financial, security, safety	1400 – ID, passports
Military inc pallet/ case	54
Passenger transport/ automotive	1956 – clickers, cards
Other	423

**Total 6022 (incl. Chipless)**

RFID chip sales cumulative	
NXP	2500
EM Micro	1400
Texas Insts	800
Sony	400
Impinj	380
Other	401
<b>Total</b>	<b>5881</b>

# Sales growth: tags 2007 to 2008

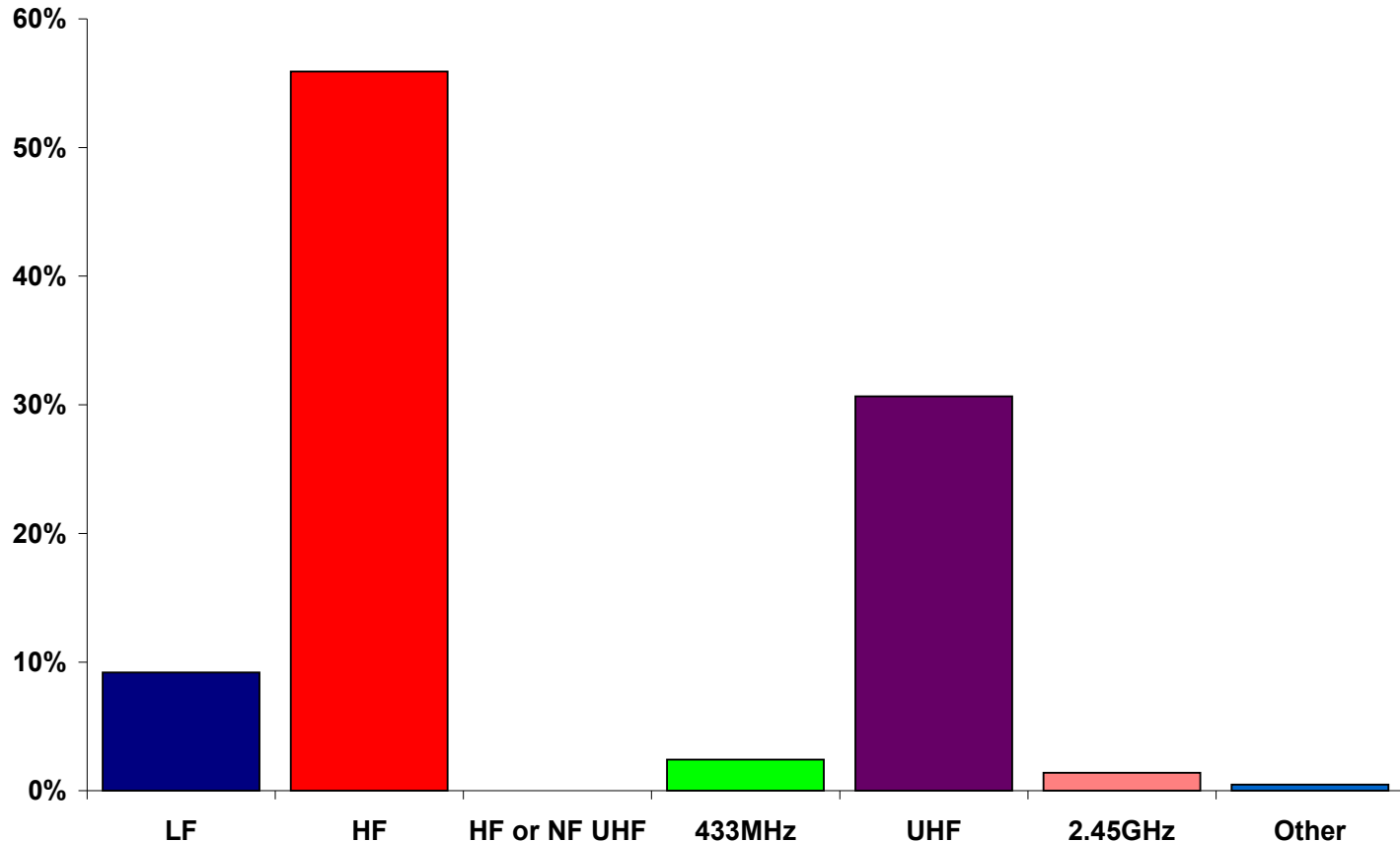
	Number m		Value \$m	
	2007	2008	2007	2008
Drugs and Other Healthcare	30	38	10.1	17.7
Retail apparel	95	200	17.1	28
Consumer goods	7	10	1.5	1.6
Postal	1	2	4.8	5.1
Books	60	85	18	24.3
Manufacturing parts, tools	40	55	16.4	22
Pallet/case	225	325	29.3	35.8
Smart cards/payment key fobs	630	559	1420	1408
Smart tickets	250	325	50	52.0
Air baggage	45	75	9	15.0
Conveyances/Rollcages/ULD/Totes	25	28	22.5	16.8
Animals	80	90	80.0	90.0
Passport page/secure documents	45	65	171	247.0
Other tag applications	85	293	309.7	396.7
<b>Total (billion)</b>	<b>1.74</b>	<b>2.15</b>	<b>2.16</b>	<b>2.36</b>



Source: IDTechEx RFID Forecasts, Players & Opportunities 2008-2018  
[www.IDTechEx.com/forecasts](http://www.IDTechEx.com/forecasts)

# Surprise! HF is the most popular frequency in 2008 (again)

Numbers of tags (% of total number)



Source: IDTechEx RFID Forecasts,  
Players & Opportunities 2008-2018  
[www.IDTechEx.com/forecasts](http://www.IDTechEx.com/forecasts)

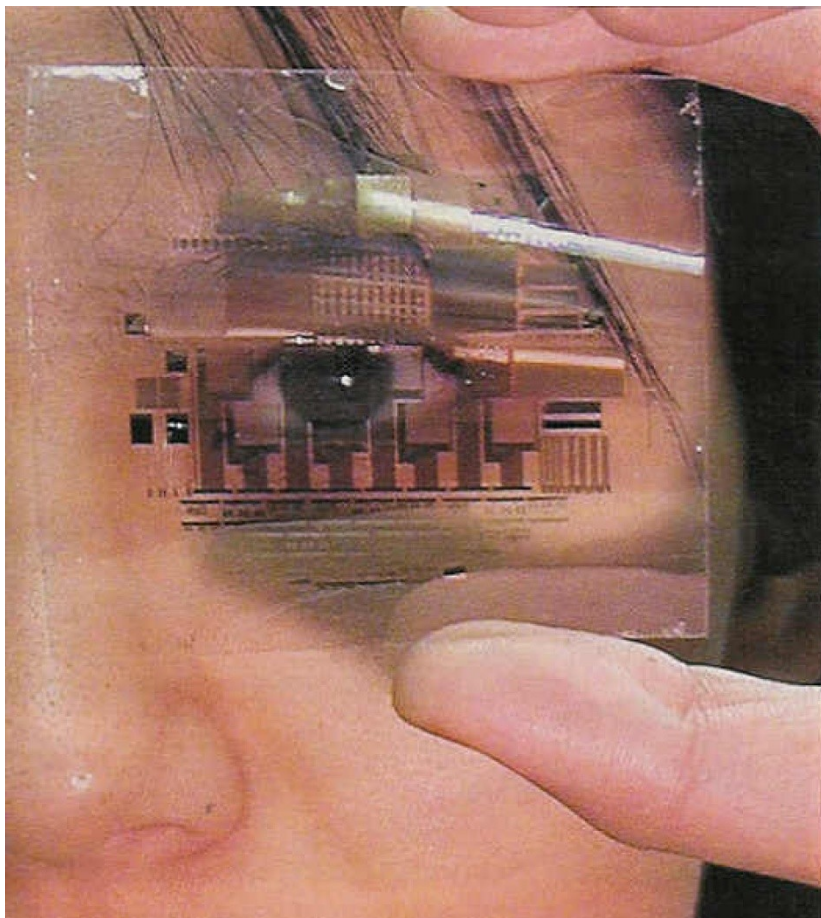
# Progress at HF: RFID Cellphones

- Already huge in East Asia thanks to RFID cards used for transport and payment – now migrated to RFID enabled cellphones
- ISO 14443 A; ISO 14443 B; Sony “type C” – NFC is backwardly compatible with all three
- In 2007 NTT DoCoMo sold 47 Million RFID enabled cellphones, leveraging RFID infrastructure for transport and 20,000+ POS RFID readers in Tokyo stores.
- West is laggard but will catch up as RFID infrastructure goes in for POS and transport, e.g. London Transport has installed a \$1.6 Billion RFID system



**A ubiquitous  
RFID reader  
network...at HF**

# Printed Electronics – no silicon chip



**250+ organisations**

**PolyIC, Kovio, Philips,  
Plastic Logic, Epson,  
Canon, Xerox, IBM, HP,  
OrganicID, Infineon, 3M...**

**Lower frequencies  
preferred but increasing**

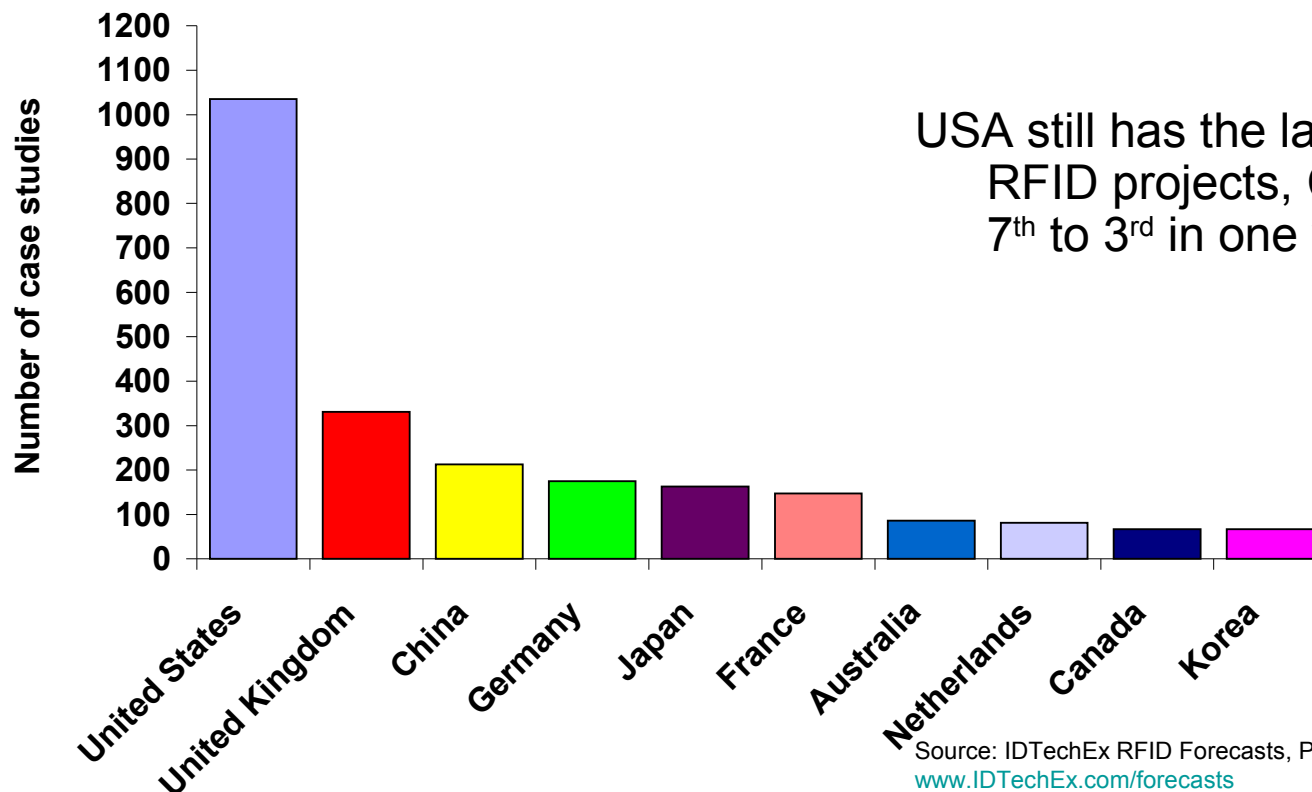
**13.56MHz demonstrated,  
UHF possible**

# Passive RFID – growth areas in 2008

- **Item level RFID**
  - Marks & Spencer apparel (Over 100 Million to date), BGN bookstores. Best Buy, Tesco... report 5 to 20% sales uplift!
- **Airline baggage**
  - IATA agree on a frequency, Lyngsoe Systems solve UHF read problems? Now Milan airport rolls-out.
- **Postal**
  - Low volume but large scale network and impressive payback. UHF EPC at Correos “Europe’s largest EPC roll out”
- **Cards and tickets**
  - China ID, ticketing etc.
- **Animals**

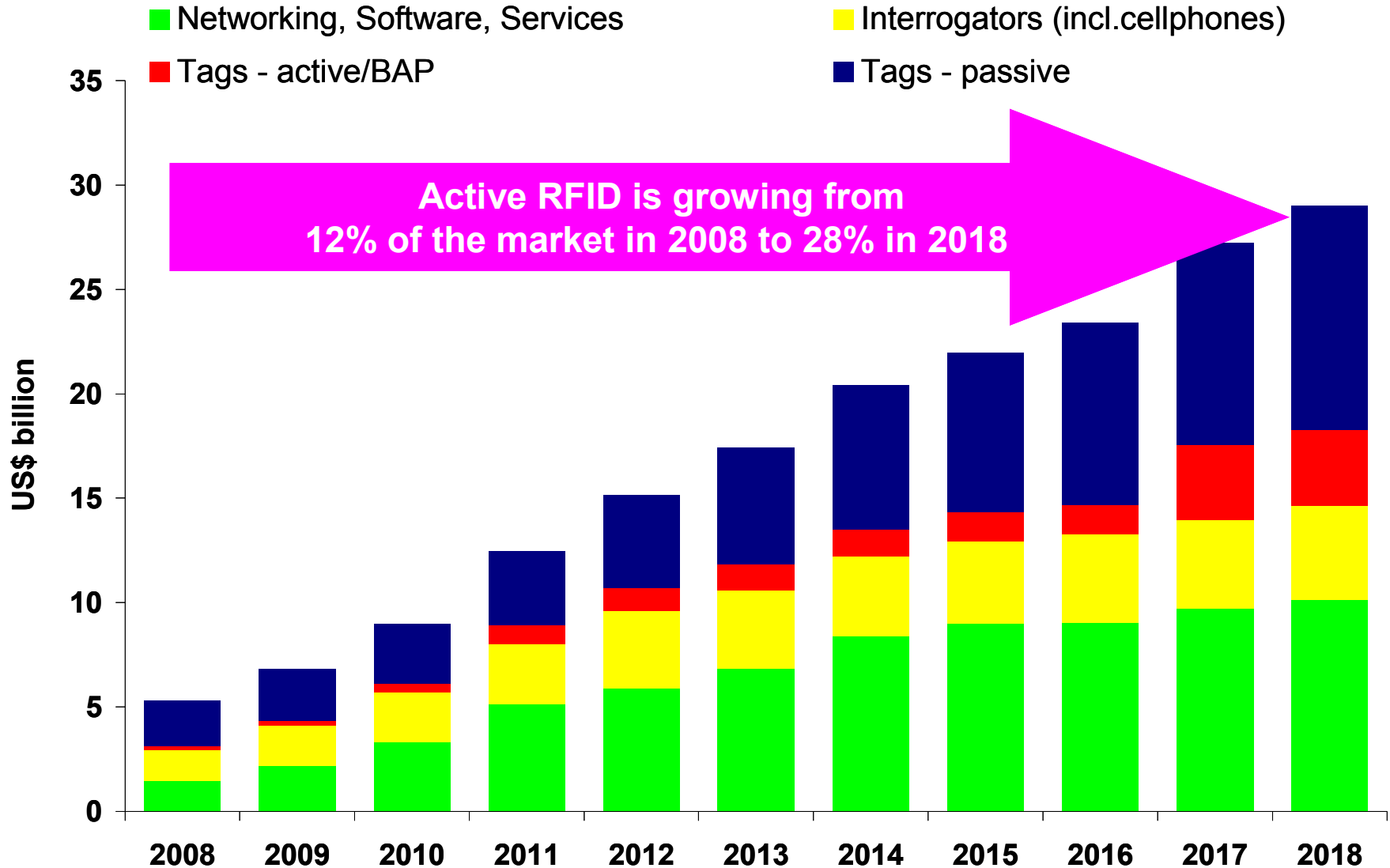
# Total market size

- 2008 - \$5.29 Billion
  - Cards \$3.03bn; Labels/tickets/fobs \$2.26bn
  - Passive \$4.64bn; Active \$0.65bn

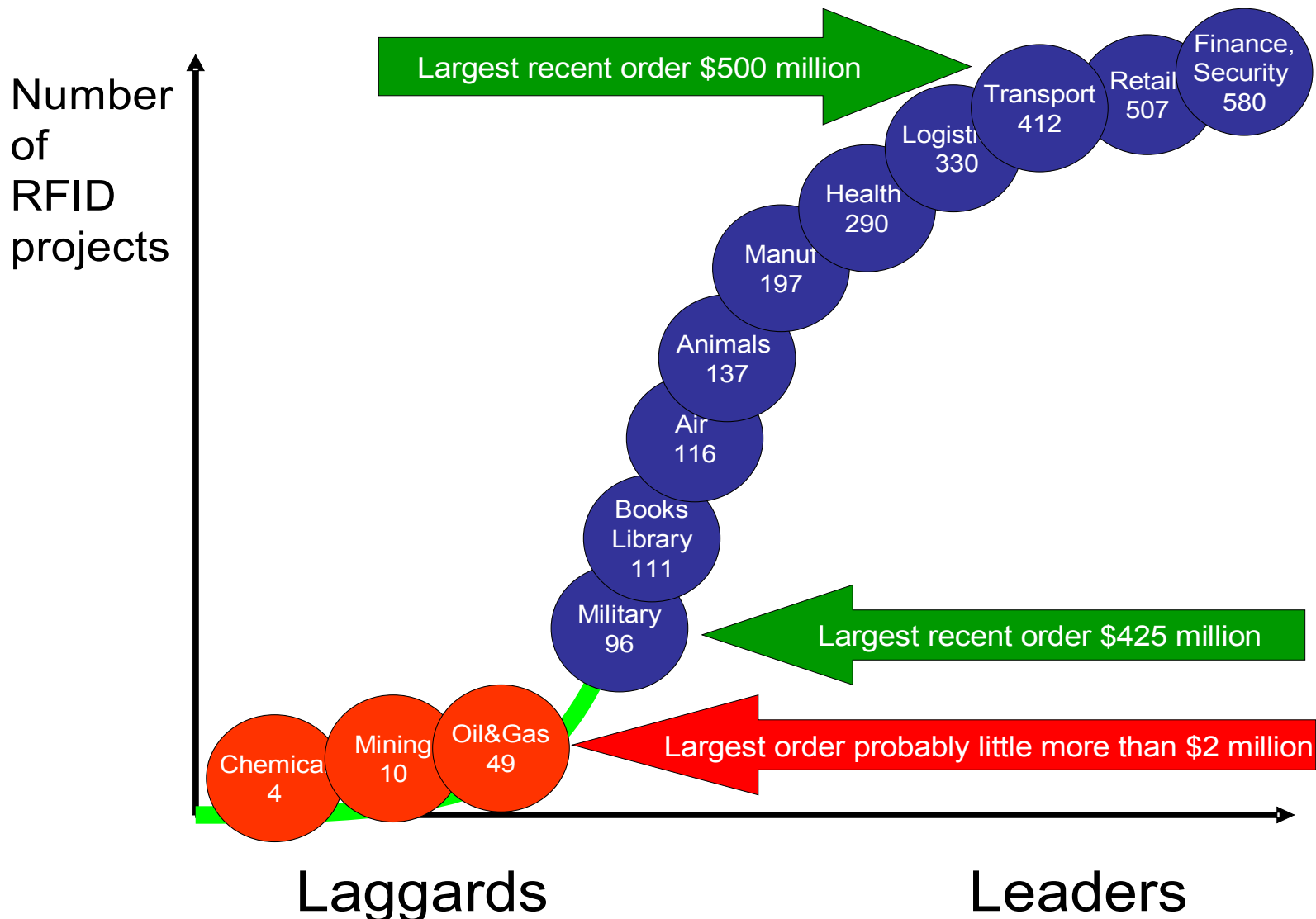


Source: IDTechEx RFID Forecasts, Players & Opportunities 2008-2018  
[www.IDTechEx.com/forecasts](http://www.IDTechEx.com/forecasts)

# Active RFID grows fastest



# Maturity by number of case studies



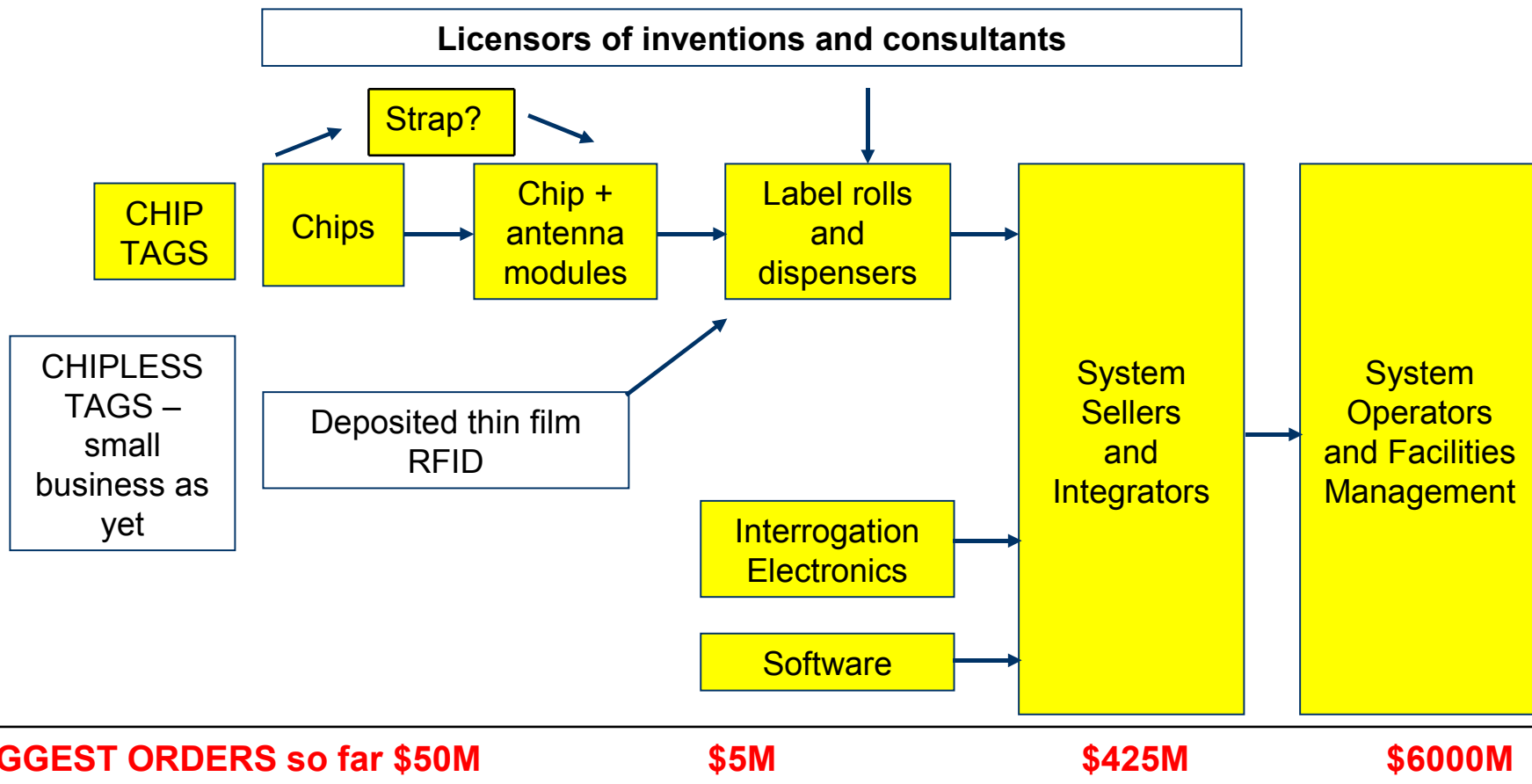
# RFID is currently in a silly season

- New suppliers arrive faster than mergers and exits take place – over 1000 and most of them are under funded and local in reach. Many are running into cash traps
- Major customers want fewer suppliers and they want them to have global reach

# RFID Value Chain 2008

**Horizontal (selling to anyone)**

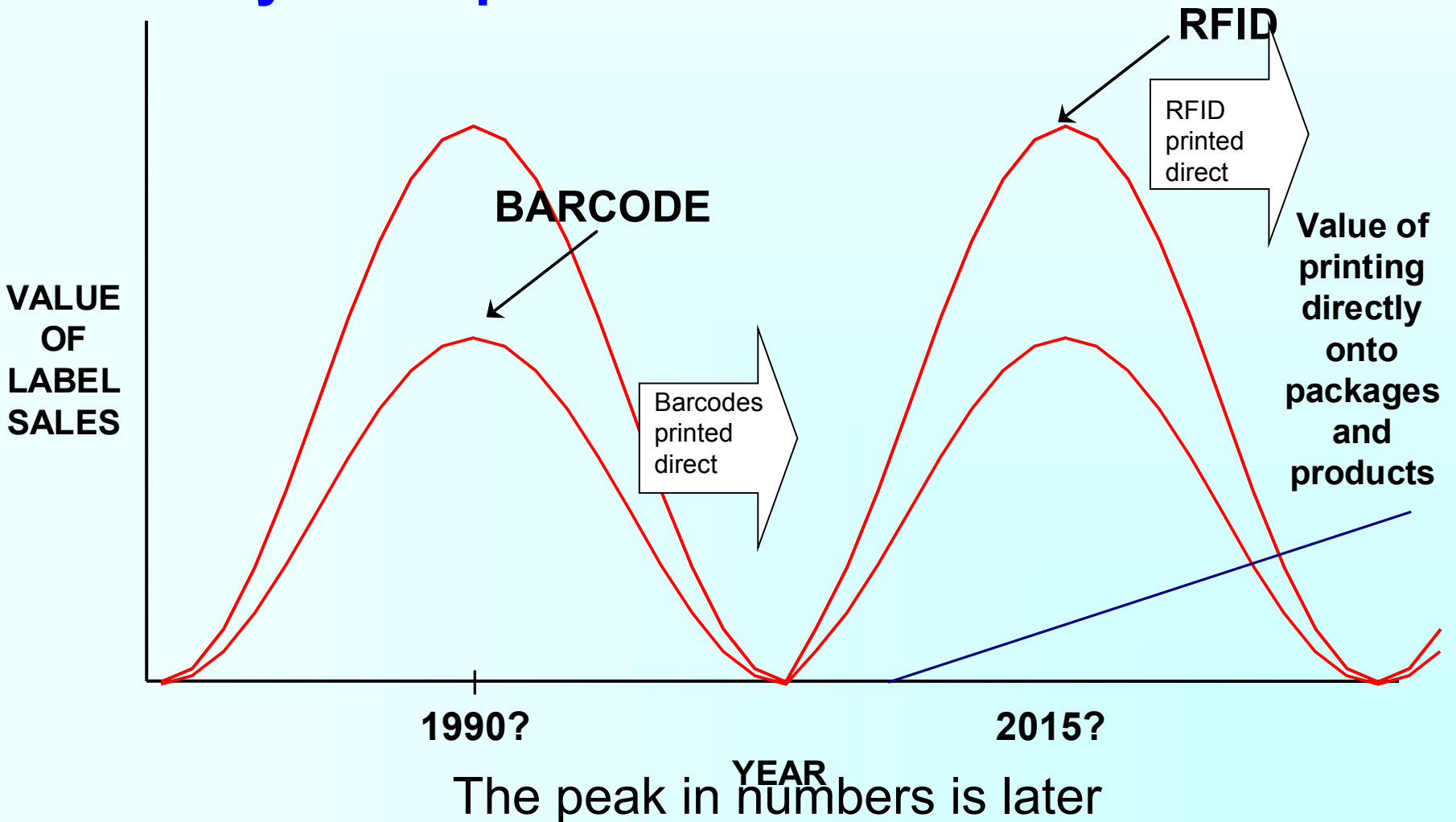
**Vertical (specialising)**





# High volume item level RFID tagging

## History will repeat itself - almost



# For more...

IDTechEx carries out market and business analysis, technology matching and forecasting for many of the world's largest printing, packaging and electronics companies and even for start-ups – we can help you.

Contact Raghu Das on [r.das@idtechex.com](mailto:r.das@idtechex.com)

+1 617 959 7436 or +44 1223 813703

**Expertise in RFID, smart packaging and printed electronics**



**Read “RFID Forecasts, Players and Opportunities 2008-2018”**

([www.IDTechEx.com](http://www.IDTechEx.com))