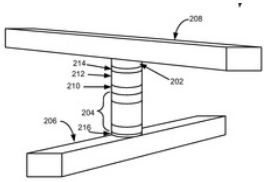
REPORT SAMPLE

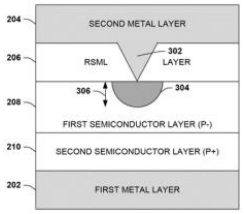
Resistive Memories

ReRAM and Memristor

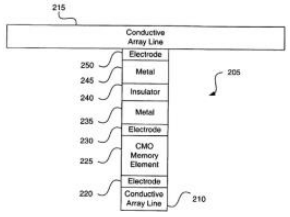
Patent Landscape 2015



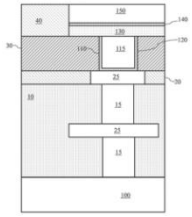
SanDisk



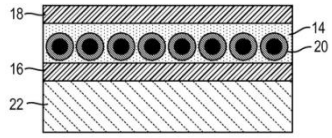
Crossbar



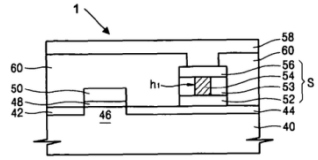
Unity Semiconductor



Adesto Technologies



Hewlett Packard



Samsung Electronics

KnowMade

IP and Technology Intelligence

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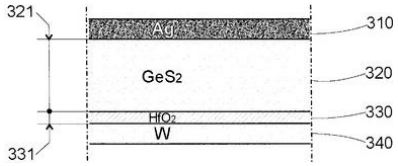
TABLE OF CONTENTS

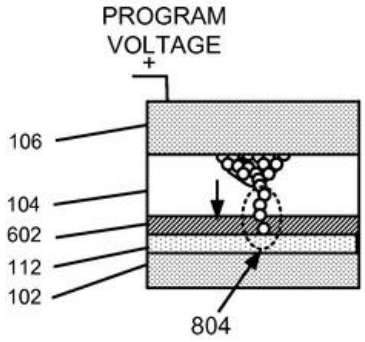
INTRODUCTION

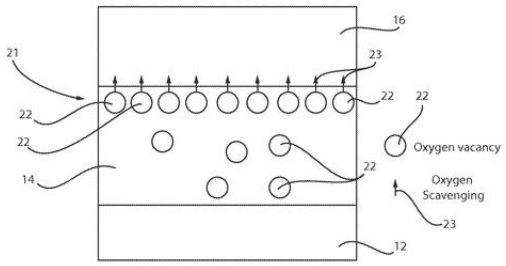
Scope of the Report

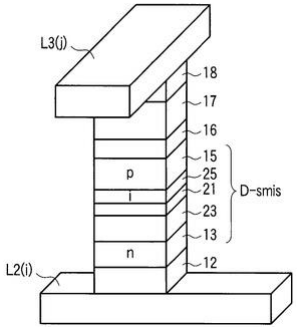
This report provides a detailed picture of the patent landscape for Resistive Random Access Memories. Only patents rel… resistive switching technologies (CBRAM, OxRRAM, CMOx) were considered. We also include in this report patent related t… memristor. This report does not include patents related to resistive switching such as Phase Change Random Access Memories and Magnetic Random Access Memories, but also Ferroelectric Random Access Memories. This report covers patents published worldwide up to March 2015. More than 2,600 patent families relevant to the scope of this report have been selected.

Included in the study

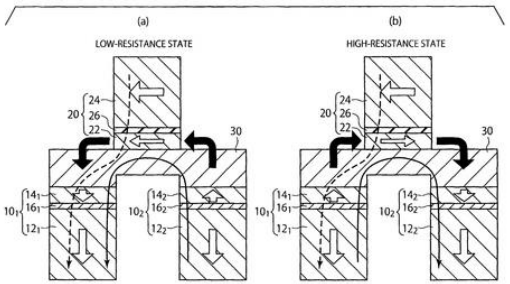


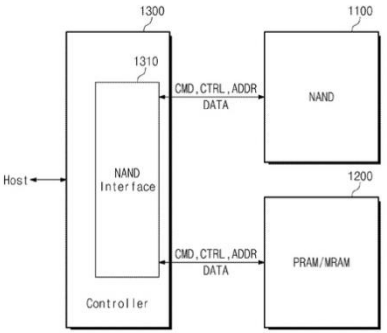


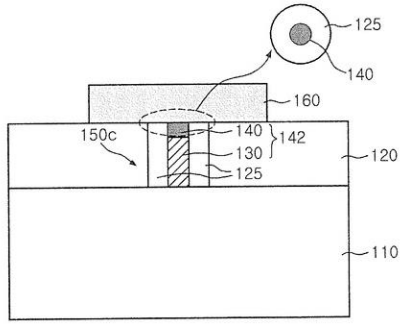


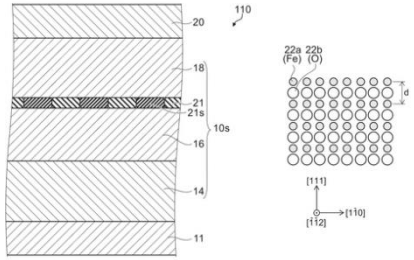


Not included in the study









STT-RAM, MRAM, PCRAM and FeRAM

INTRODUCTION

Key Features of the Report (1/2)

- **The report provides essential patent data for Resistive Random Access Memory (ReRAM).**

- **It identifies more than 15+ major holders of ReRAM memory related intellectual property. It provides in-depth IP analysis and industrial key players including:**
  - Time evolution of patent publications and countries of patent filings.
  - Current legal status of patents.
  - Ranking of main patent applicants.
  - Joint developments and IP collaboration network of main patent applicants.
  - Key patents.
  - Granted patents near expiration.
  - Relative strength of main companies IP portfolio.
  - Matrix applicants/technology issues for more than 15 companies.

- **The "ReRAM IP" profiles of 15+ major companies is presented, with key patents, recent patents, technological issues, partnerships, last market news.**

INTRODUCTION

Key Features of the Report (2/2)

- **The report also provides an extensive Excel database with all patents analyzed in the report.**

- **This database allows multi-criteria searches:**

  Patent information

  - Patent publication number
  - Hyperlinks to the original documents
  - Priority date
  - Title
  - Abstract
  - Patent Assignees
  - Legal status for each member of the patent family

- **This report does not provide** any insight analyses or counsel regarding legal aspects or the validity of any individual patent: KnowMade is research firm that provide market and technical analysis and opinions. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such.

INTRODUCTION

Objectives of the Report

Objectives of this patent landscape is to:

- ✓ Understand the IP landscape for ReRAM.
- ✓ Identify key patents.
- ✓ Understand trends in ReRAM Memories IP.
- ✓ Identify the major IP players in ReRAM and the relative strength of their patent portfolio.
- ✓ Identify new IP players in ReRAM.
- ✓ Identify IP collaboration networks between key players.
- ✓ Identify main patent litigations.

INTRODUCTION
Methodology (1/2)

• The data was extracted from the FamPat worldwide database (Questel-ORBIT) which provides 80+ million patent documents from 95 offices.

• The search for patent was performed in March 2015 hence patents published after this date will not be available in this deliverable.

• The selection of the patents has been done both automatically and manually (all details in next slides).

Number of selected patent families for the ReRAM IP Investigation:
2,604 over a number of returned results > 7,700

• The statistical analysis was performed with INTELLIXIR System.

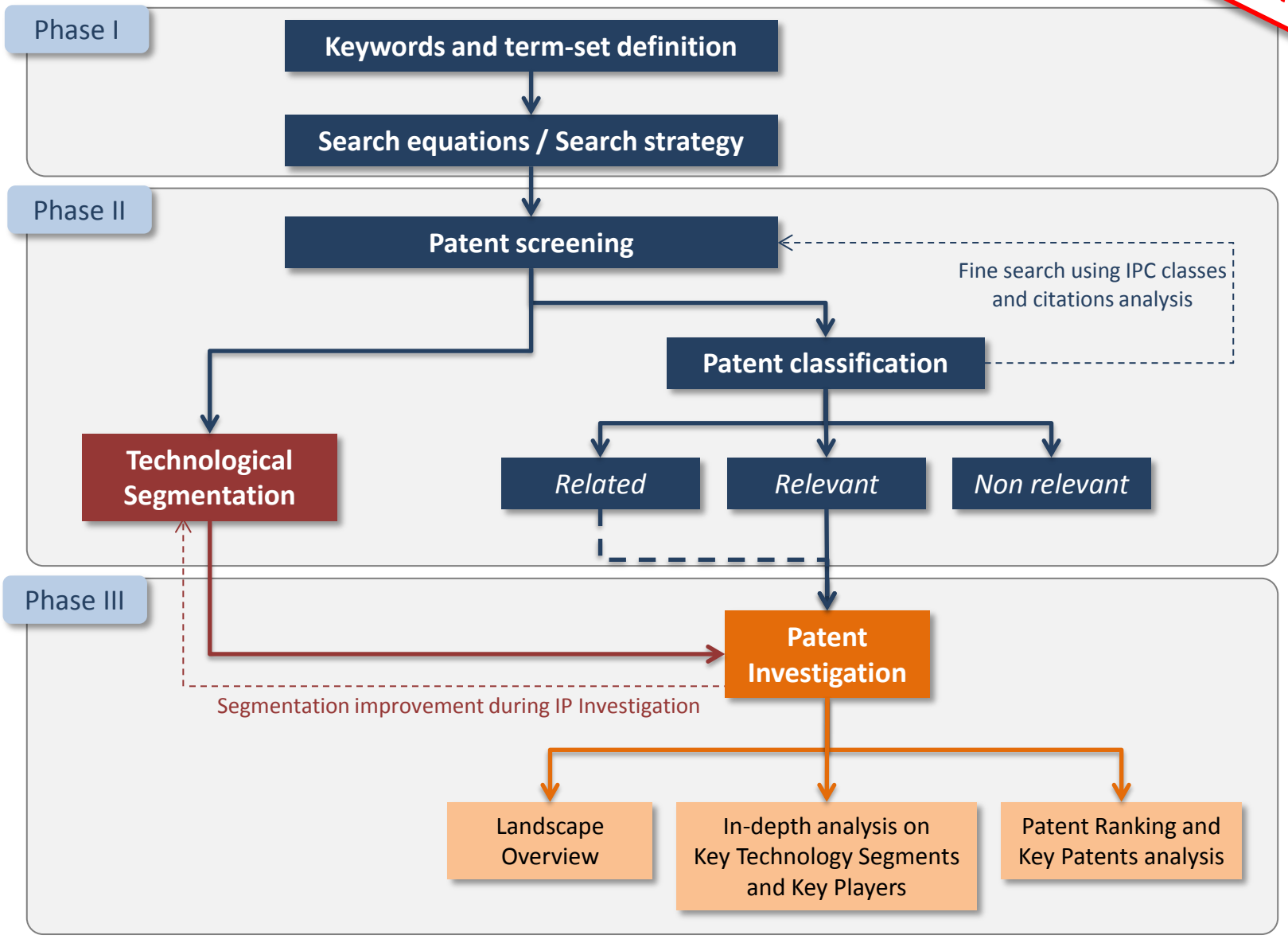
• The patents were categorized using keyword analysis of patent title, abstract and claims, in conjunction with expert review of the subject-matter of inventions (all details in next slides).

• The patents were grouped according FamPat's family rules (variation of EPO strict family): A *Patent Family* comprises patents linked by exactly same priority numbers (strict family), plus comparison of priority and application numbers, specific rules by country and information gathered from other sources (national files, legal status …).

***Disclaimer**: KnowMade are research firms that provides technical analysis and technical opinions. The research, technical analysis and/or work contained herein is not a legal opinion and should not be construed as such*.

INTRODUCTION

Methodology (2/2)



INTRODUCTION

Type of Memories

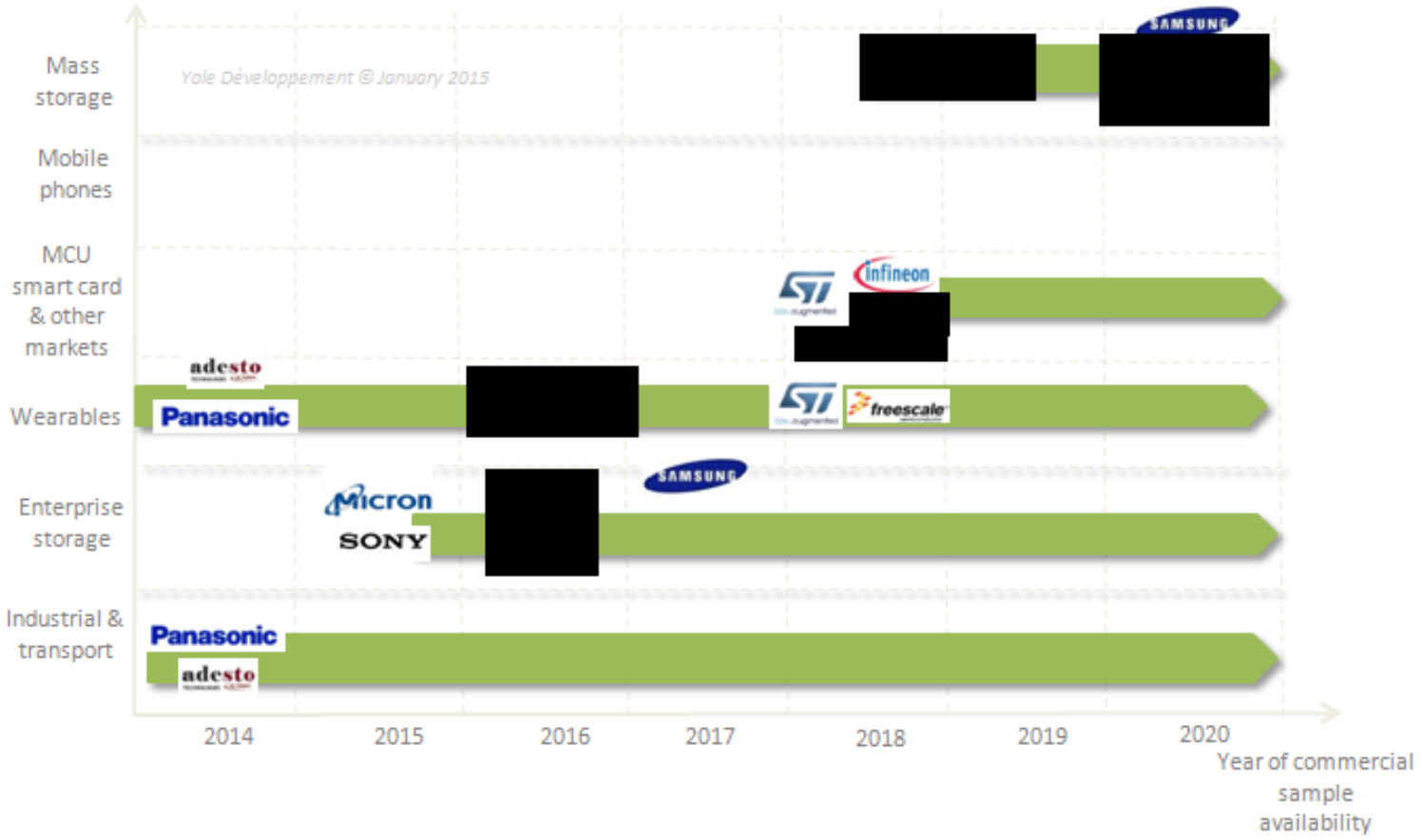
	Emerging Memories			Established Mem.	
	MRAM	**ReRAM *(or RRAM)***	**PCRAM *(or PRAM, PCM)***	**DRAM**	**Flash NAND**
Non Volatile	YES	YES	YES	NO	YES
Endurance (Nb Cycles)	High (10^{12})	Low (10^{6})	Medium (10^{8})	High (10^{15})	Low (10^{5})
2014 latest technological node produced (nm)	90 nm	130 nm	45 nm	30 nm	15 nm
Cell Size (in F^2)	Medium (6-12)	Medium (6-12)	Medium (6-12)	Small (6-10)	Very small (4)
Write speed (ns)	High (10 ns)	High (10 ns)	Medium (75 ns)	High (10 ns)	Low (10,000 ns)
Power Consumption	Medium/Low	Low (3- 5 pJ/bit)	Medium	Low	Very High
2014 Price ($/Gb)	High ($ 100 - 50 /Gb)	High ($ 5000 /Gb)	Medium (few $/ Gb)	Low ($1/Gb)	Very Low ($ 0.05/Gb)
Suppliers	Everspin Technologies	Adesto Technologies	Micron, Samsung	Samsung, Micron, SK Hynix	Samsung, Micron, Toshiba, SK Hynix

From Yole Développement « Emerging NVM » 2015 Report

In PCRAM and MRAM, the active memory elements for information storage are resistive. We made the choice in this report to separate these two memories from ReRAM analysis.

INTRODUCTION

ReRAM Time-to-Market and Players by Application and with key p



Industrial and wearable have been the first ReRAM market and will be followed by SCM for enterprise storage in 2015. Next milestone will be in 2018, with adoption on MCU as a replacement of eFlash and introduction on mass storage applications by **XX** as a replacement of NAND.

INTRODUCTION

ReRAM IP History

Many companies have been working on ReRAM, for a very long time so there is already some high background technology. Most importantly, the patents on the basic ReRAM switching concepts have expired.

The slide below is from a Deepak C. Sekar presentation. He has been a Director at Rambus, Chief Scientist at MonolithIC 3D inc. and has held various engineering roles at SanDisk.

In this report, we decided to focus on ReRAM patents close to the current resistive memory structures (CBRAM, OXRRAM, CMOx).

Intellectual Property

1960s: Switching observed

Solid-State Electronics Pergamon Press 1968. Vol. 11, pp. 535–541. Printed in Great Britain

SWITCHING PHENOMENA IN TITANIUM OXIDE THIN FILMS

1968 F. ARGALL

Physics Department, Chelsea College of Science and Technology, University of London, London, S.W.3

Late 1960s-early 1970s: Forming, filamentary model, switching summary of 10 different transition MeO_x where Me is Ti, Ta, Zr, V, Ni, etc

Electrical phenomena in amorphous oxide films

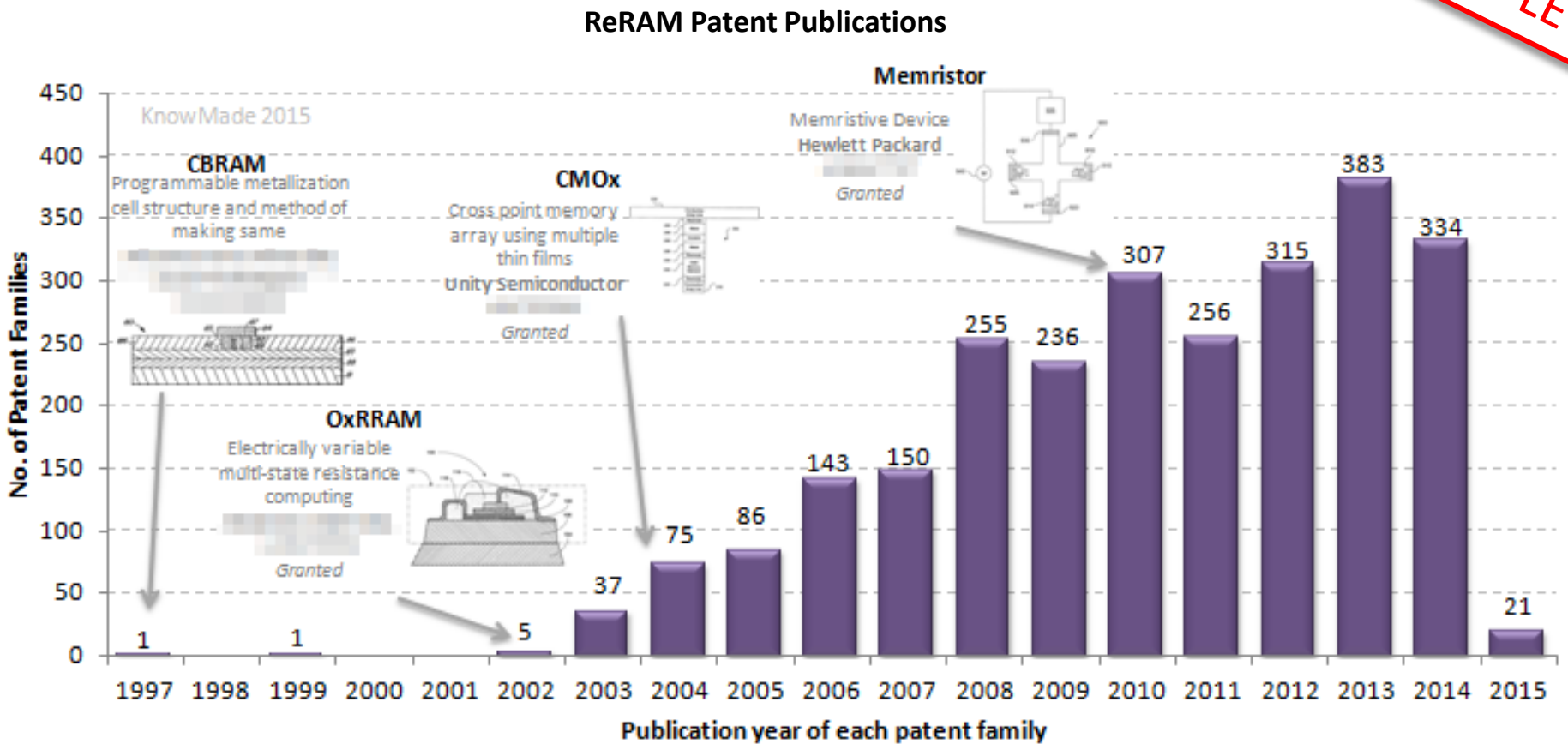
1970 G. DEARNALEY,† A. M. STONEHAM,† AND D. V. MORGAN‡

- Patents, if any, on *basic switching concepts*, have expired ☺.
- Good patents on more advanced concepts exist (eg) Pt-replacement approaches, array architectures, doping, etc. Can engineer around many of these.
- IP scenario for RRAM a key advantage. Other resistive memories have gate-keepers (eg) Basic patents on PCM, CB-RAM, STT-MRAM from Ovonyx, Axon Technologies, Grandis.

Resistive RAM: Technology and Market Opportunities (2010)

IP Landscape Overview

Time Evolution of Patent Publications

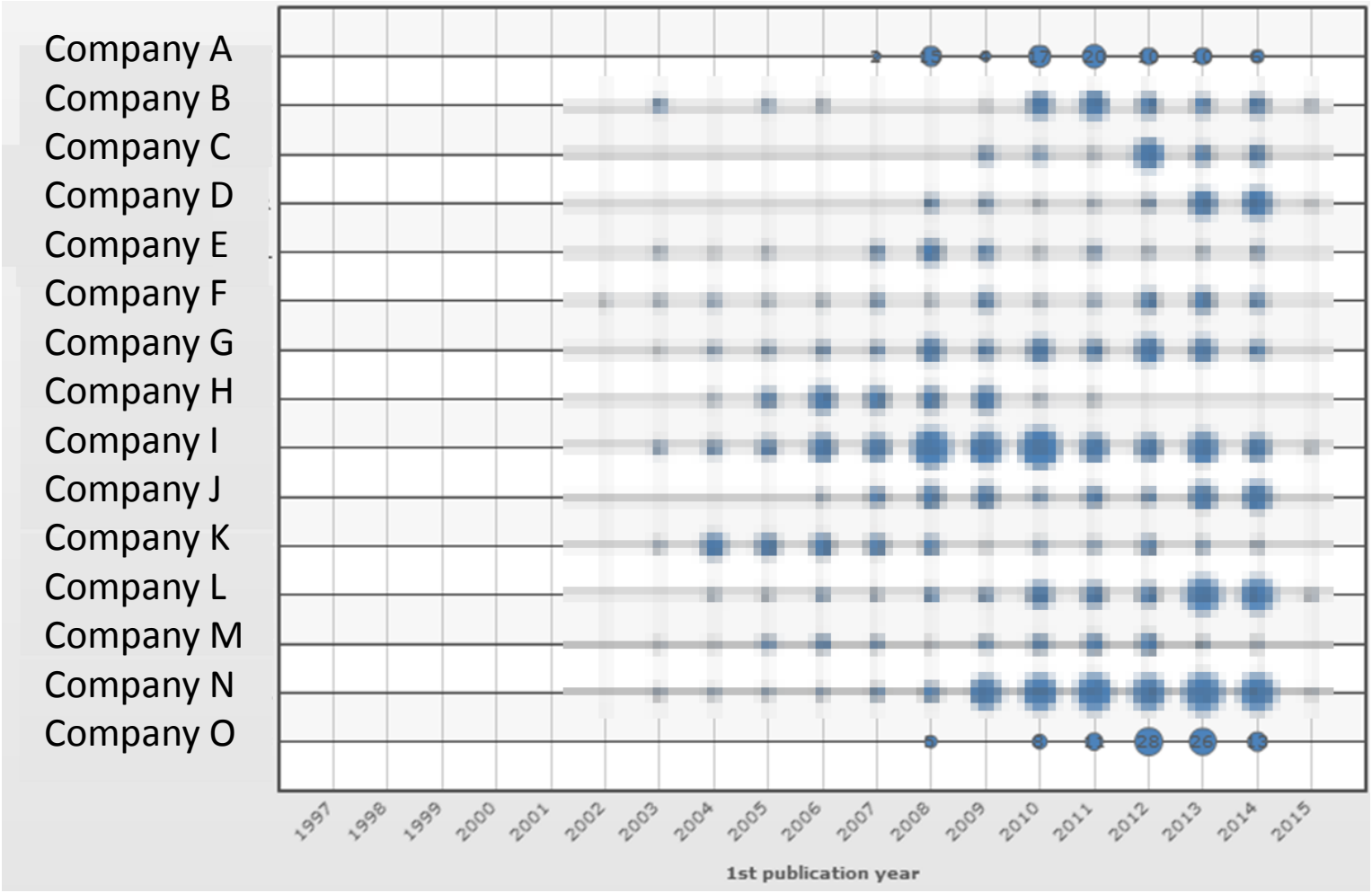


In 1997, the first patent published relates on programmable metallization cell. The increase of patenting activity observed since 2003 shows a growing market on resistive memory technology. By the end of 2014, more than 2100 patent families related to ReRAM technologies have been published with more than XXX patent families on memristor.

Note: The data corresponding to the year 2015 is not complete since the patent search was done in March 2015.

IP Landscape Overview

Time Evolution of Patent Assignees



Dates are the earliest publication of each patent family. Bubble size represents the number of published patent families. The data corresponding to the year 2015 may not be complete since the patent search was done early March 2015.

A was the most active in the 2008-2010 period. These last years, **B, C, D** and **E** were the most active. Note that **Toshiba**, **SanDisk** and **Intermolecular** have signed a joint development agreement in 2010. **F** shows high number of publications since 2010 with patents on XXX.

IP Landscape Overview

Mapping of Main Current IP Holders

Toshiba holds most of the granted patents in the **USA** and **Korea**. **Sharp** is the main IP holder in **Taiwan and Europe**, and has interest in Japan, Korea and China as well. In USA, most of its granted patents were acquired in 2012 by **Intellectual Properties Kft** or **Xenogenic Development Limited Liability Company**. **Samsung** is the main IP holder in **Korea** and is also well protected in **USA**, while **Panasonic** is main IP holder in **China.**

IP Landscape Overview

Summary of Main Assignee Patent Portfolios

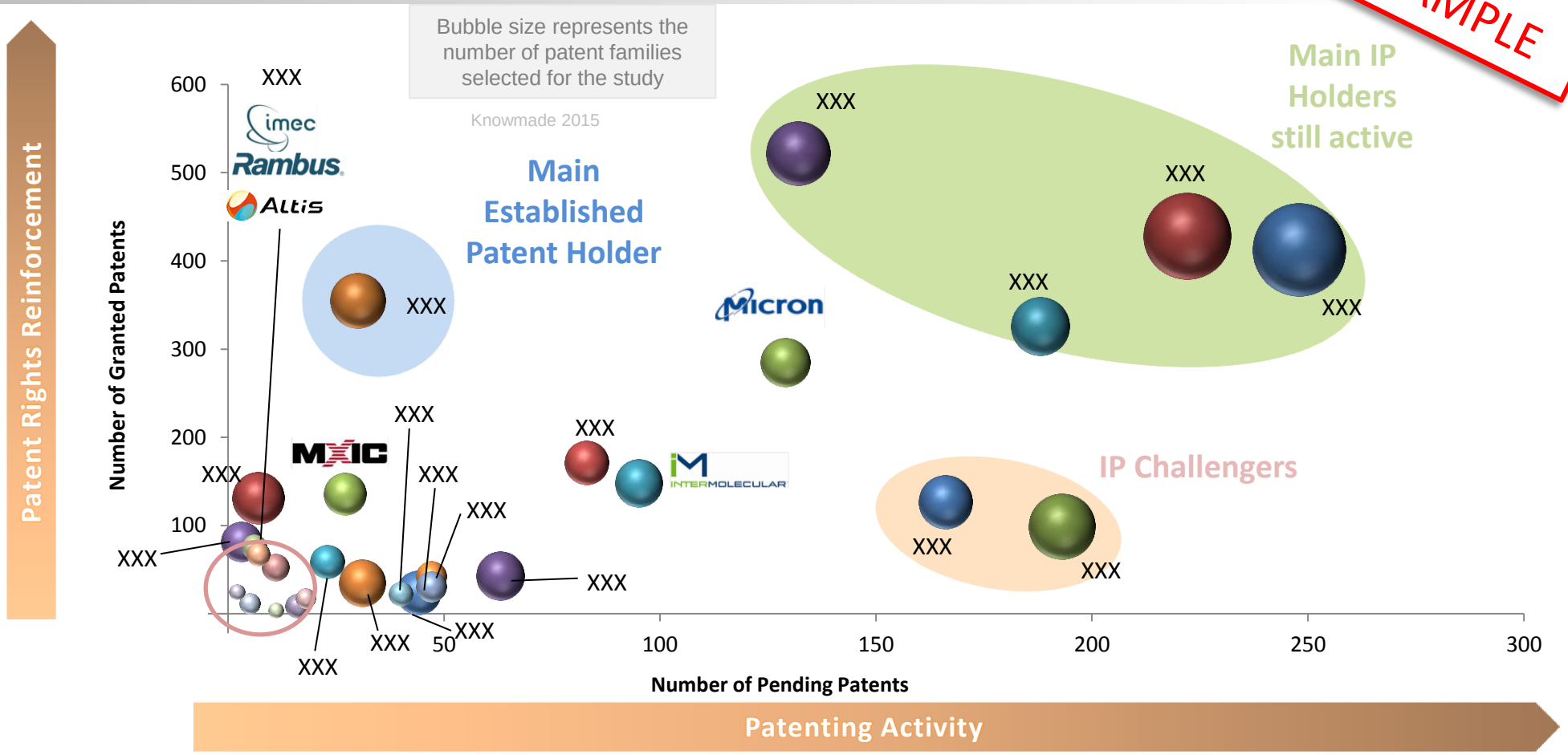
KnowMade, 2015

Ranking	Patent Applicants	No. of patent families	Earliest Application Year of the patent portfolio	No. of patent families filed / yr (average)	No. of patents documents	No. of patents / Patent family (average)	Patents average age (Y)	% granted	% pending	% dead revoked lapsed expired	No. of alive patents / family (granted, pending)	No. of patent family by coun… US	EP	JP	CN	TW	KR
1	Company A																
2	Company B																
3	Company C																
4	Company D																
5	Company E																
6	Company F																
7	Company G																
8	Company H																
9	Company I																
10	Company J																
11	Company K																
12	Company L																
13	Company M																
14	Company N																
15	Company O																
16	Company P																
	Company Q																
	Company R																
	Company S																
	Company T																
	Company U																
Other Key Players	Company V	23	2003	1.9	28	1	3	32%	57%	11%	1.1	3			2	3	1
	Company W	22	2004	2.0	139	6	2	17%	29%	55%	2.9	5	2	1			
	Company X	20	2002	1.5	93	5	6	73%	8%	19%	3.8	18			1		
	Company Y	16	2006	1.8	24	2	5	50%	21%	29%	1.1	7					
	Company Z																
	Company AA																
	Company AB																

: highest value per column
: lowest value per column

IP Landscape Overview

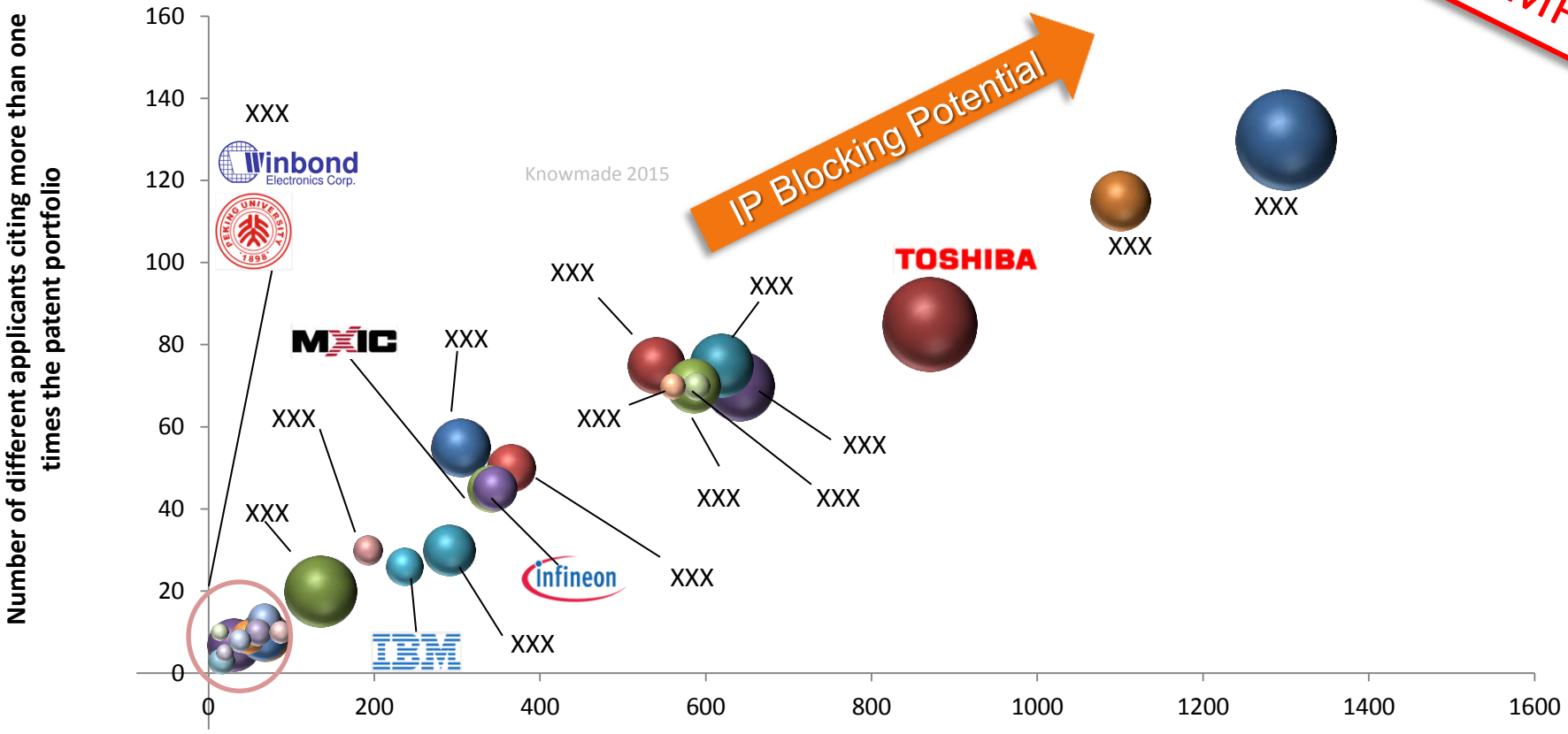
Leadership of Patent Assignees



Companies A and **B** are IP challengers with more than 150 pending applications all over the world except in Japan. **C** is focused these last years on more efficient ReRAM (programming, 3D architecture). **D** signed a joint development with **E** and **F** in 2010. Since 2007, it owns already more than 140 granted patents. **G** has most of its US granted patents acquired in 2012 by **H** or **I**. **J,** with 1st patent filed in 2010 has already more than 40 granted and pending patents. **K** holds more than 70 granted patents but has only 6 pending applications on ReRAM (Programming Metallization Cell) with first patent expiring in 2016. This shows that **L** reduced its investment in R&D in the field.

IP Landscape Overview

IP Blocking Potential of Assignees

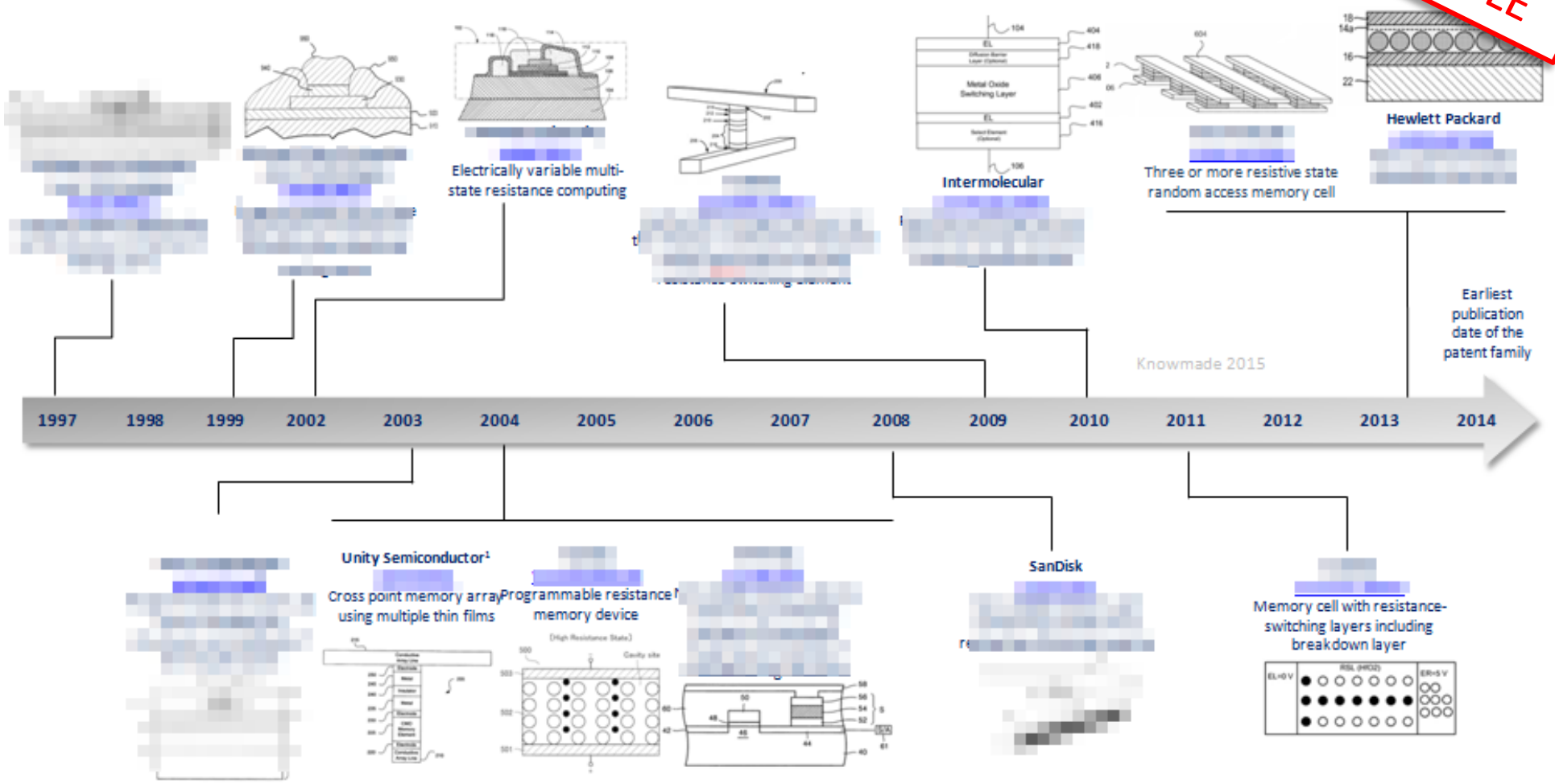


The more the number of forward citations from different patent applicants is high, the more the capacity to hamper the other firms' attempts to patent a related invention is important. Note, however, that the identification of a "blocking patent" requires an in-depth specific analysis of each patent documents.

A distinguishes itself with the **highest IP blocking potential**. It is followed by **B** with very high number of citations. These citations arise from high number of patents published by B in 2004-2008 period mainly on Oxide Resistive Random Access Memory.
C and **D** have also high IP blocking potential despite their small patent portfolio.
Note that **E** with high patent portfolio has a weak blocking potential, due to few citations of its portfolio. **E** mostly published patents on ReRAM process fabrication.

IP Landscape Overview

Key Patent Families

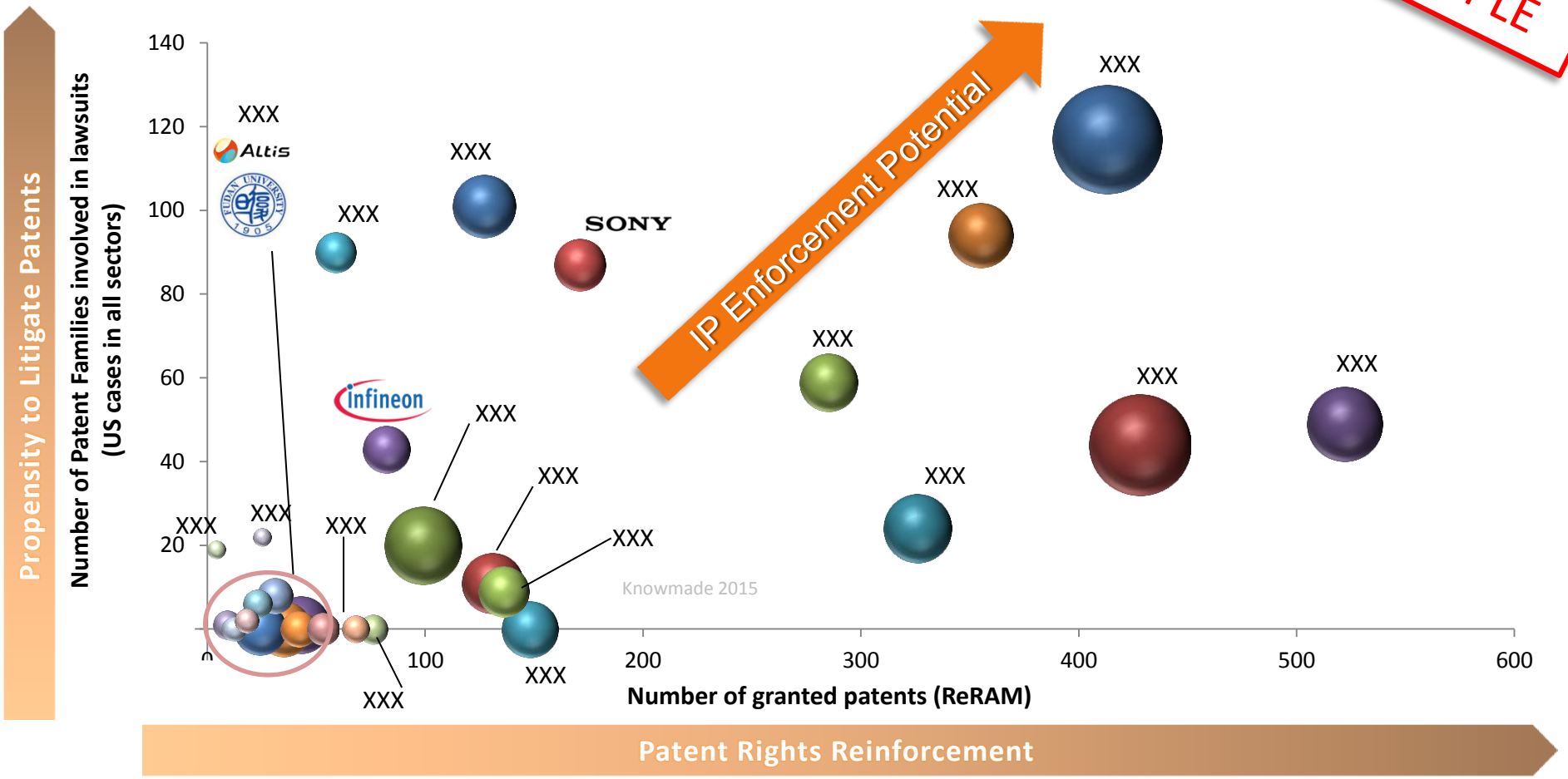


Patent numbers correspond to representative member of the families, assignee names take into account original applicants and reassignments.

[1]Acquired by Rambus in 2012

IP Landscape Overview

Potential Future Plaintiffs



As far as we know, there is no patent litigation on ReRAM technology area since the market is starting. In a few years, when there would be no innovation anymore, players will create value with patent litigation.

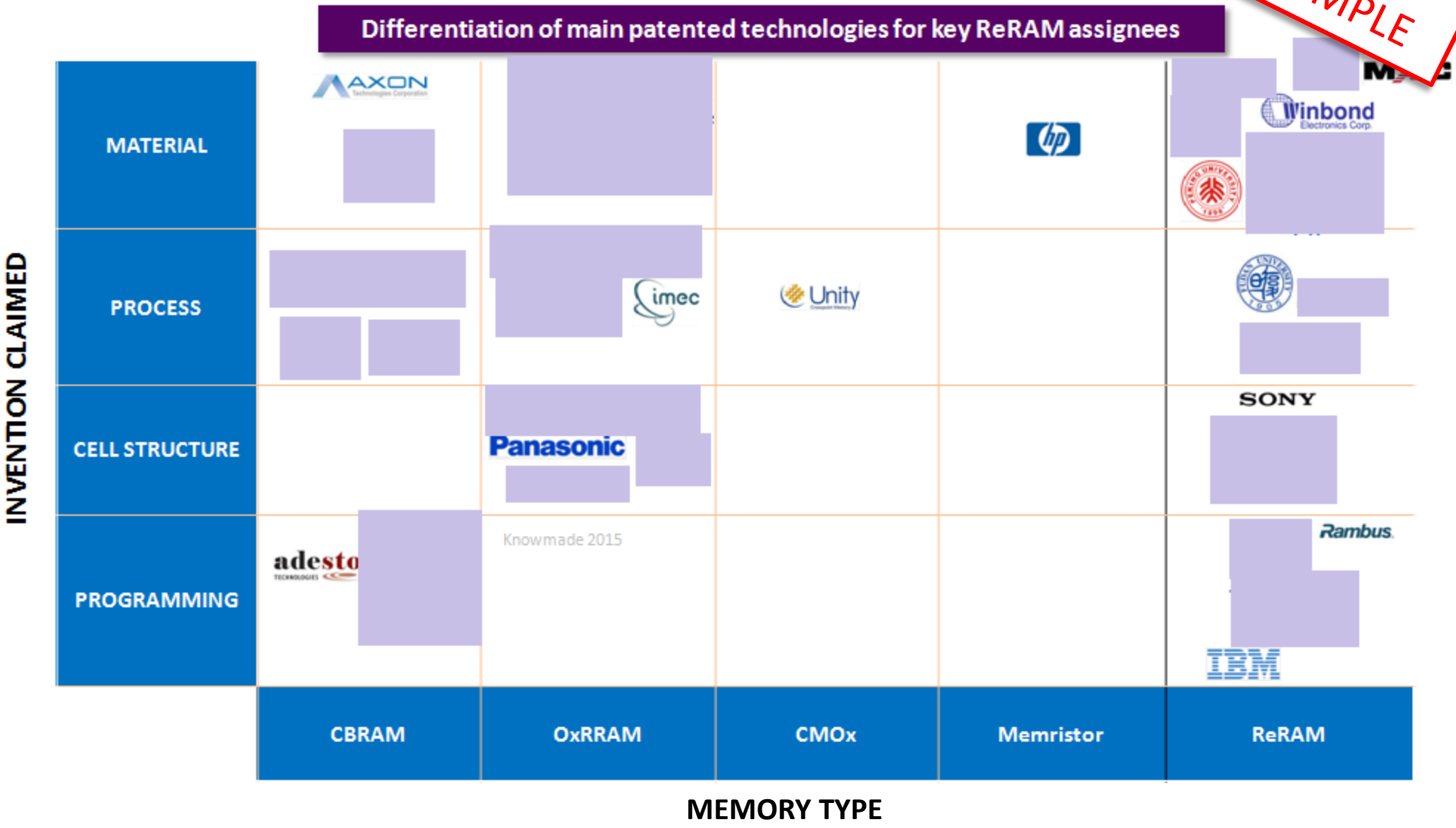
A is one of the companies of this study to be the most implicated in lawsuits.

B, C and **D** have high propensity to file complaints. In the future, **C** as IP challenger will be a dangerous player in resistive memory field with increased number of granted patents.

E is involved in litigations regularly and is also important actor of the field.

Patent Segmentation

Patent Differentiation

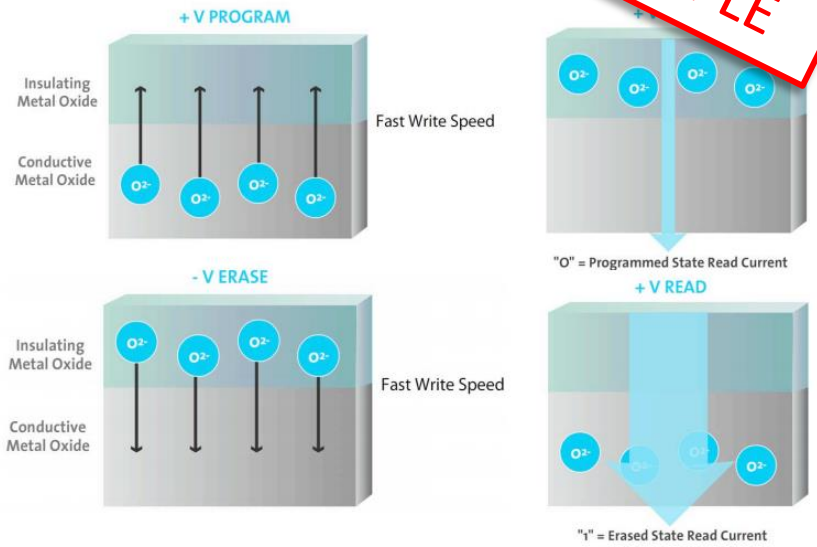


Note that this representation reflects clear and accessible information available in patent abstract, claims or sometimes description.
The four segments are firstly considered. If no clear trend emerged, the assignee focuses on general ReRAM in its patents.

CMOx
Technology Description

CMOx (Conductive Metal Oxide)

Unity's technology is based on a passive cross-point, multi-layer memory array and its CMOx memory cell, a technology that is based on conductive metal oxide materials and the motion of ions. Unity's CMOx-based design uses four physical layers of multi-level cell (MLC) memory and is the key to increasing the density of its storage-class memory products. CMOx will yield products with 4x the density and 5–10x the write speed of today's NAND Flash.



Operating principle of CMOx cell
Source: Unity Semiconductor, 2011

Principle

CMOx works by ion movement under electrical field.

Advantages

- Low switching current (< 1uA/cell)
- Progressive, time dependent programming
- Suitable for Self Rectifying Cell (Asymmetry and Non-linearity of LRS I-V behavior)

Main Challenges

- Materials:
  - -Complex perovskite oxides : process (in) compatibility ?
  - -Pt electrode required for good Schottky barriers
- Thick films → may compromise scaling

CMOx

Patented Technology

- [redacted] patent families focus on CMOx technology in the study.
- First patent on conductive metal oxide was published in 2004 by Unity Semiconductor, [redacted]
- Unity Semiconductor is [redacted]
- Patent publication on CMOx technology is [redacted]
- Recent patents on CMOx technology published in 2014 focus on [redacted]
- Current Player on CMOx technology is [redacted]

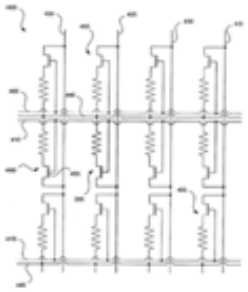
CMOx

Key Patent Families

Unity Semiconductor[1]

[redacted]

Non-volatile memory with a single transistor and resistive memory element



[redacted]

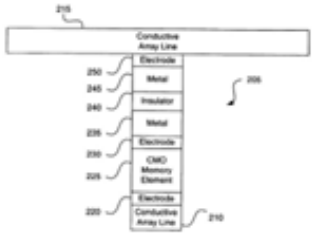
Earliest publication date of the patent family

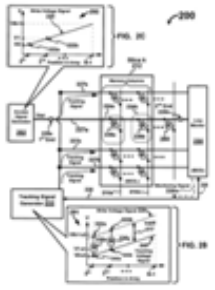
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Unity Semiconductor[1]

[redacted]

Cross point memory array using multiple thin films





[redacted]

Array voltage regulating technique to enable data operations on large cross-point memory arrays with resistive memory elements

Patent numbers correspond to representative member of the families, assignee names take into account original applicants and reassignments.

[1]Acquired by Rambus in 2012

Focus on Key Players

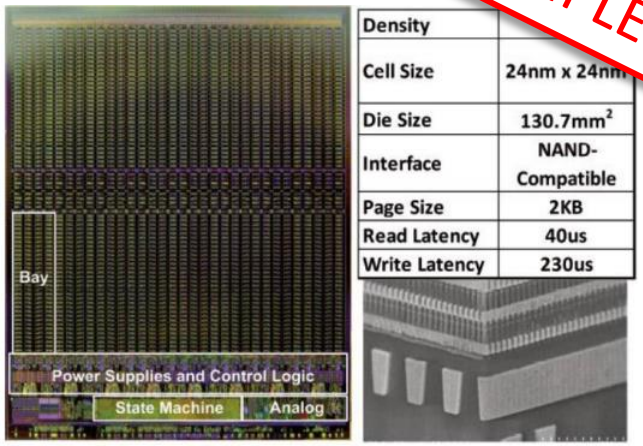
SanDisk

LAST NEWS

- ISSC Conference, Feb 2013, SanDisk and Toshiba presented a 32Gb, 24 nm device with diode as selection device. – Latencies for reading and writing are 40µs and 230µs, respectively

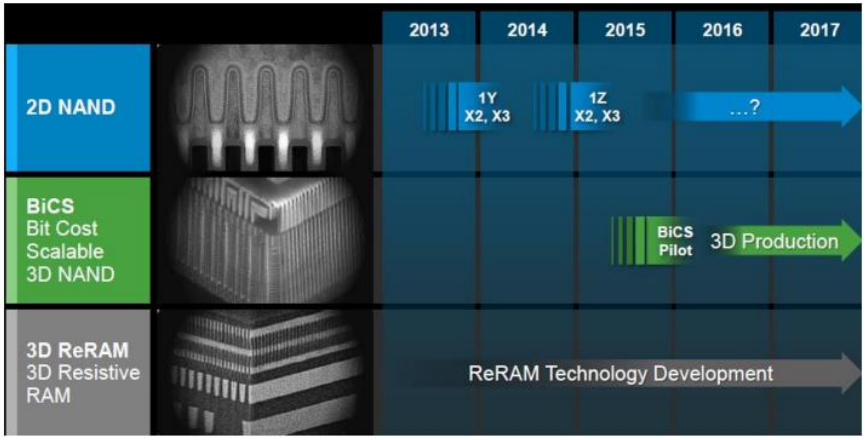
TECHNOLOGY CHOICE

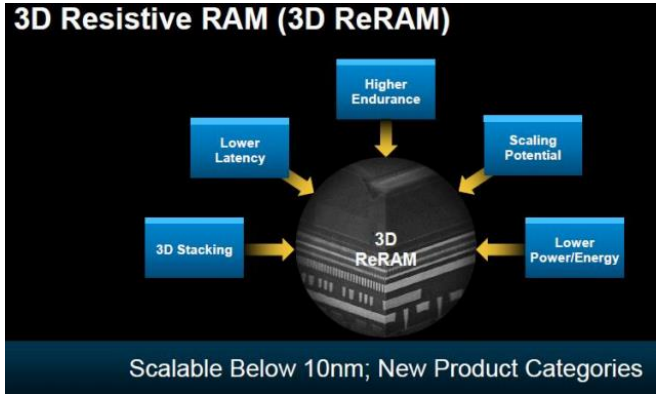
- #4 NAND producer
- NAND production alliance with Toshiba since 2000
- SanDisk develop 3D RRAM with Toshiba for next 3D NAND generation which is expected much after 2018
- 3D RRAM: the best attributes to replace 3D NAND



Density	
Cell Size	24nm x 24nm
Die Size	130.7mm^2
Interface	NAND-Compatible
Page Size	2KB
Read Latency	40us
Write Latency	230us

32Gb, 24nm device Source: Winbond Electronics, Feb 2014





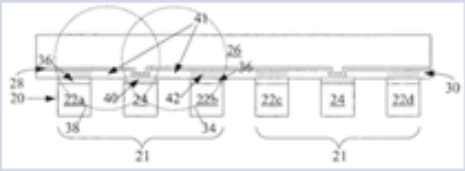
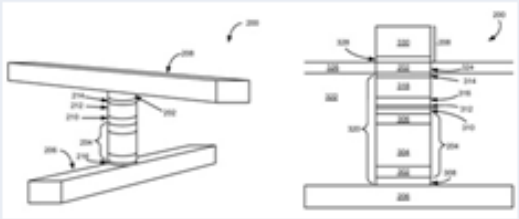
Source: SanDisk, May 2014

RECENT PATENTS

- Most of SanDisk's recent patents are focusing on some challenges, as dimensions of semiconductor devices scale down:
  - [redacted]
  - [redacted]
  - [redacted]

Focus on Key Players

SanDisk: Key Patent Families

KEY PATENT FAMILIES *Patent number (representative member), earliest publication date, title and principal drawing*	RATIONALES FOR CHOICE
[redacted] *Nonvolatile memory cell comprising switchable resistor and transistor* 	- [redacted] These properties would make these materials attractive for use in nonvolatile memory arrays, [redacted] - More than 110 forward citations (mostly by [redacted]) - Patent filed in [redacted] - 7 granted patents [redacted]
[redacted] **(2009)** *Method of forming a memory cell that employs* [redacted] 	- [redacted] - [redacted] - More than 50 forward citations (mostly by [redacted]) - Patent filed in [redacted] - 3 granted patents (US, EP,CN)

Excel Database

with all patents analyzed in the report with technology segmentation

This database allows multi-criteria searches and includes patent publication number, hyperlinks to the original documents, priority date, title, abstract, patent assignees, technological segments and legal status for each member of the patent family.

KnowMade

esistive Memory Patent Landscape - June 2015

									Segmentation								
									Memory Type				Invention Claimed				Current Legal Status & Action Taken
Family Number (FamPat Database)	Publication Numbers	Publication Data & Hyperlink to	Application Date	Application Number	Oldest Priority Date of the Family	Title	Abstract	Assignee	CBRAM	OxRRAM	CMOx	Memristor	Material	Process	Cell Structure	Programming	
4585390	US20130 US89479	US20132 2013-10-	2013-06-17	US13/9	2010-11-04	Hetero-switching	The method	CROSSBAR					x		x	x	LEGAL DETAILS FOR US201
5920014	CN10328	CN10328 2013-09-	2013-06-14	CN2013	2013-06-14	Analog-digital	The method	UNIVERSITY OF				x				x	LEGAL DETAILS FOR CN103
6074028	CN10332	CN10332 2013-09-	2013-06-09	CN2013	2013-06-09	Chip static	A method of	UNIVERSITY OF				x			x		LEGAL DETAILS FOR CN103
6138876	US20140	US20141 2014-06-	2013-06-03	US13/9	2002-03-12	Memristive neural	Embodiments of the	KNOWMTECH				x		x			LEGAL DETAILS FOR US201
6136458	CN10334	CN10334 2013-10-	2013-06-03	CN2013	2013-06-03	Resistive random	A method of	TSINGHUA UNIVERSIT								x	LEGAL DETAILS FOR CN103
6168609	WO2013	WO2013 2013-10-	2013-03-26	WOUS	2012-03-26	Solid electrolyte	The present		x				x	x		x	LEGAL DETAILS FOR WO201
6168609	US2013	US20132 2013-10-	2013-03-25	US13/8	2012-03-26	Solid electrolyte	An example		x				x	x		x	LEGAL DETAILS FOR US201
6022904	CN10331	CN10331 2013-09-	2013-05-30	CN2013	2013-05-30	Analog-digital	A method of	UNIVERSITY OF				x				x	LEGAL DETAILS FOR CN103
5982071	CN10329	CN10329 2013-09-	2013-05-30	CN2013	2013-05-30	Resistive random	The invention	TSINGHUA UNIVERSIT					x	x	x		LEGAL DETAILS FOR CN103
7180989	EP27655	EP27655 08-13 [EP	2014-02-07	EP1415	2013-02-08	Method for	A memory cell (10)	CEA - COMMISSA		x			x	x		x	LEGAL DETAILS FOR EP2765
7180989	FR30020	FR30020 08-15 [FR	2013-02-08	FR1351	2013-02-08	METHOD OF	The disclosed	CEA - COMMISSA		x			x	x		x	LEGAL DETAILS FOR FR300
7180989	US20140	US20142 2014-09-	2014-02-07	US14/1	2013-02-08	Method of programmi	A memory cell (10)	CEA - COMMISSA		x			x	x		x	LEGAL DETAILS FOR US201
6105128	CN10333	CN10333 2013-10-	2013-05-29	CN2013	2013-05-29	Cascade system	A memory managem	UNIVERSITY BEIJING								x	LEGAL DETAILS FOR CN103
5919099	CN10328 CN10328	CN10328 2013-09-	2013-05-29	CN2013	2013-05-29	A memristor	An audio encoder	UNIVERSITY BEIJING				x	x	x			LEGAL DETAILS FOR CN103
5847182	CN10325	CN10325 2013-08-	2013-05-29	CN2013	2013-05-29	Encoding method	A memory managem	UNIVERSITY BEIJING								x	LEGAL DETAILS FOR CN103
5876693	CN10326	CN10326	2013-05-28	CN2013	2013-05-28	Al-W-O	An audio	TSINGHUA									

ORDER FORM

Resistive Memory Patent Landscape

July 2015

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Terms and Conditions of Sales

Definitions

"Acceptance": Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions "I hereby accept Knowmade's Terms and Conditions of Sale".

"Buyer": Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

"Contracting Parties" or "Parties": The Seller on the one hand and the Buyer on the other hand.

"Intellectual Property Rights" ("IPR") means any rights held by the Seller in its Products, including any patents, trademarks, registered models, designs, copyrights, inventions, commercial secrets and know-how, technical information, company or trading names and any other intellectual property rights or similar in any part of the world, notwithstanding the fact that they have been registered or not and including any pending registration of one of the above mentioned rights.

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"Products": Reports are established in PowerPoint and delivered on a PDF format and the database may include Excel files.

"Seller": Based in Sophia Antipolis (France headquarters), Knowmade is a technology intelligence company specialized in the research and analysis of scientific and technical information. We provide patent landscapes and scientific state of the art with high added value to businesses and research laboratories. Our intelligence digests play a key role to define your innovation and development strategy.

1. Scope

1.1 The Contracting Parties undertake to observe the following general conditions when agreed by the Buyer and the Seller. ANY ADDITIONAL, DIFFERENT, OR CONFLICTING TERMS AND CONDITIONS IN ANY OTHER DOCUMENTS ISSUED BY THE BUYER AT ANY TIME ARE HEREBY OBJECTED TO BY THE SELLER, SHALL BE WHOLLY INAPPLICABLE TO ANY SALE MADE HEREUNDER AND SHALL NOT BE BINDING IN ANY WAY ON THE SELLER.

1.2 This agreement becomes valid and enforceable between the Contracting Parties after clear and non-equivocal consent by any duly authorized person representing the Buyer. For these purposes, the Buyer accepts these conditions of sales when signing the purchase order which mentions "I hereby accept Knowmade's Terms and Conditions of Sale". This results in acceptance by the Buyer.

1.3 Orders are deemed to be accepted only upon written acceptance and confirmation by the Seller, within [7 days] from the date of order, to be sent either by email or to the Buyer's address. In the absence of any confirmation in writing, orders shall be deemed to have been accepted.

2. Mailing of the Products

2.1 Products are sent by email to the Buyer:

- within [1] month from the order for Products already released; or
- within a reasonable time for Products ordered prior to their effective release. In this case, the Seller shall use its best endeavours to inform the Buyer of an indicative release date and the evolution of the work in progress.

2.2 Some weeks prior to the release date the Seller can propose a pre-release discount to the Buyer.

The Seller shall by no means be responsible for any delay in respect of article 2.2 above, and including in cases where a new event or access to new contradictory information would require for the analyst extra time to compute or compare the data in order to enable the Seller to deliver a high quality Products.

2.3 The mailing of the Product will occur only upon payment by the Buyer, in accordance with the conditions contained in article 3.

2.4 The mailing is operated through electronic means either by email via the sales department. If the Product's electronic delivery format is defective, the Seller undertakes to replace it at no charge to the Buyer provided that it is informed of the defective formatting within 90 days from the date of the original download or receipt of the Product.

2.5 The person receiving the Products on behalf of the Buyer shall immediately verify the quality of the Products and their conformity to the order. Any claim for apparent defects or for non-conformity shall be sent in writing to the Seller within 8 days of receipt of the Products. For this purpose, the Buyer agrees to produce sufficient evidence of such defects.

2.6 No return of Products shall be accepted without prior information to the Seller, even in case of delayed delivery. Any Product returned to the Seller without providing prior information to the Seller as required under article 2.5 shall remain at the Buyer's risk.

Terms and Conditions of Sales

3. Price, invoicing and payment

3.1 Prices are given in the orders corresponding to each Product sold on a unit basis or corresponding to annual subscriptions. They are expressed to be inclusive of all taxes. The prices may be reevaluated from time to time. The effective price is deemed to be the one applicable at the time of the order.

3.2 Payments due by the Buyer shall be sent by cheque payable to Knowmade, PayPal or by electronic transfer to the following account:

Banque populaire St Laurent du Var CAP 3000 - Quartier du lac- 06700 St Laurent du Var

BIC or SWIFT code: CCBPFRPPNCE

IBAN: : FR76 1560 7000 6360 6214 5695 126

To ensure the payments, the Seller reserves the right to request down payments from the Buyer. In this case, the need of down payments will be mentioned on the order.

3.3 Payment is due by the Buyer to the Seller within 30 days from invoice date, except in the case of a particular written agreement. If the Buyer fails to pay within this time and fails to contact the Seller, the latter shall be entitled to invoice interest in arrears based on the annual rate Refi of the «BCE» + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only after reception of the payment.

3.4 In the event of termination of the contract, or of misconduct, during the contract, the Seller will have the right to invoice at the stage in progress, and to take legal action for damages.

4. Liabilities

4.1 The Buyer or any other individual or legal person acting on its behalf, being a business user buying the Products for its business activities, shall be solely responsible for choosing the Products and for the use and interpretations he makes of the documents it purchases, of the results he obtains, and of the advice and acts it deduces thereof.

4.2 The Seller shall only be liable for (i) direct and (ii) foreseeable pecuniary loss, caused by the Products or arising from a material breach of this agreement

4.3 In no event shall the Seller be liable for:

a) damages of any kind, including without limitation, incidental or consequential damages (including, but not limited to, damages for loss of profits, business interruption and loss of programs or information) arising out of the use of or inability to use the Seller's website or the Products, or any information provided on the website, or in the Products;

b) any claim attributable to errors, omissions or other inaccuracies in the Product or interpretations thereof.

4.4 All the information contained in the Products has been obtained from sources believed to be reliable. The Seller does not warrant the accuracy, completeness adequacy or reliability of such information, which cannot be guaranteed to be free from errors.

4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified by or substituted with similar Products meeting the needs of the Buyer. This modification shall not lead to the liability of the Seller, provided that the Seller ensures the substituted Product is similar to the Product initially ordered.

4.6 In the case where, after inspection, it is acknowledged that the Products contain defects, the Seller undertakes to replace the defective products as far as the supplies allow and without indemnities or compensation of any kind for labor costs, delays, loss caused or any other reason. The replacement is guaranteed for a maximum of two months starting from the delivery date. Any replacement is excluded for any event as set out in article 5 below.

4.7 The deadlines that the Seller is asked to state for the mailing of the Products are given for information only and are not guaranteed. If such deadlines are not met, it shall not lead to any damages or cancellation of the orders, except for non-acceptable delays exceeding [4] months from the stated deadline, without information from the Seller. In such case only, the Buyer shall be entitled to ask for a reimbursement of its first down payment to the exclusion of any further damages.

4.8 The Seller does not make any warranties, express or implied, including, without limitation, those of saleability and fitness for a particular purpose, with respect to the Products. Although the Seller shall take reasonable steps to screen Products for infection of viruses, worms, Trojan horses or other codes containing contaminating or destructive properties before making the Products available, the Seller cannot guarantee that any Product will be free from infection.

5. Force majeure

The Seller shall not be liable for any delay in performance directly or indirectly caused by or resulting from acts of nature, fire, flood, accident, riot, war, government intervention, embargoes, strikes, labor difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control, and not the fault of the Seller.

Terms and Conditions of Sales

6. Protection of the Seller's IPR

6.1 All the IPR attached to the Products are and remain the property of the Seller and are protected under French and international copyright law and conventions.

6.2 The Buyer agreed not to disclose, copy, reproduce, redistribute, resell or publish the Product, or any part of it to any other party other than employees of its company. The Buyer shall have the right to use the Products solely for its own internal information purposes. In particular, the Buyer shall therefore not use the Product for purposes such as:

- Information storage and retrieval systems;
- Recordings and re-transmittals over any network (including any local area network);
- use in any timesharing, service bureau, bulletin board or similar arrangement or public display;
- Posting any Product to any other online service (including bulletin boards or the Internet);
- Licensing, leasing, selling, offering for sale or assigning the Product.

6.3 The Buyer shall be solely responsible towards the Seller of all infringements of this obligation, whether this infringement comes from its employees or any person to whom the Buyer has sent the Products and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.

6.4 The Buyer shall define within its company point of contact for the needs of the contract. This person will be the recipient of each new report in PDF format. This person shall also be responsible for respect of the copyrights and will guaranty that the Products are not disseminated out of the company.

7. Termination

7.1 If the Buyer cancels the order in whole or in part or postpones the date of mailing, the Buyer shall indemnify the Seller for the entire costs that have been incurred as at the date of notification by the Buyer of such delay or cancellation. This may also apply for any other direct or indirect consequential loss that may be borne by the Seller, following this decision.

7.2 In the event of breach by one Party under these conditions or the order, the non-breaching Party may send a notification to the other by recorded delivery letter upon which, after a period of thirty (30) days without solving the problem, the non-breaching Party shall be entitled to terminate all the pending orders, without being liable for any compensation.

8. Miscellaneous

All the provisions of these Terms and Conditions are for the benefit of the Seller itself, but also for its licensors, employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer.

Any notices under these Terms and Conditions shall be given in writing. They shall be effective upon receipt by the other Party.

The Seller may, from time to time, update these Terms and Conditions and the Buyer, is deemed to have accepted the latest version of these terms and conditions, provided they have been communicated to him in due time.

9. Governing law and jurisdiction

9.1 Any dispute arising out or linked to these Terms and Conditions or to any contract (orders) entered into in application of these Terms and Conditions shall be settled by the French Commercial Courts of Grasse, which shall have exclusive jurisdiction upon such issues.

9.2 French law shall govern the relation between the Buyer and the Seller, in accordance with these Terms and Conditions.

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