



The importance of Competitive Intelligence – The Thomson Solution

Case Study – Rotor Blade Technology and AgustaWestland Helicopters

February 5th, 2008

Daphne Grecchi
Thomson Scientific

Objectives

The objectives of this session are:

- To show how patent information can be used in the innovation process and for competitive intelligence
- To show how non-patent information like Sci/Tech literature, business information and news can be integrated in the process
- To inspire the participants to improve the processes in their own organisation

Agenda

- Quick Introduction to Thomson Scientific
- The Innovation Cycle
- Competitive Landscaping
- Identifying Competitors
- Using Patent Citation Analysis
- Prior Art Searching
- Patent Analysis
- Business Information and News

Thomson Corporation

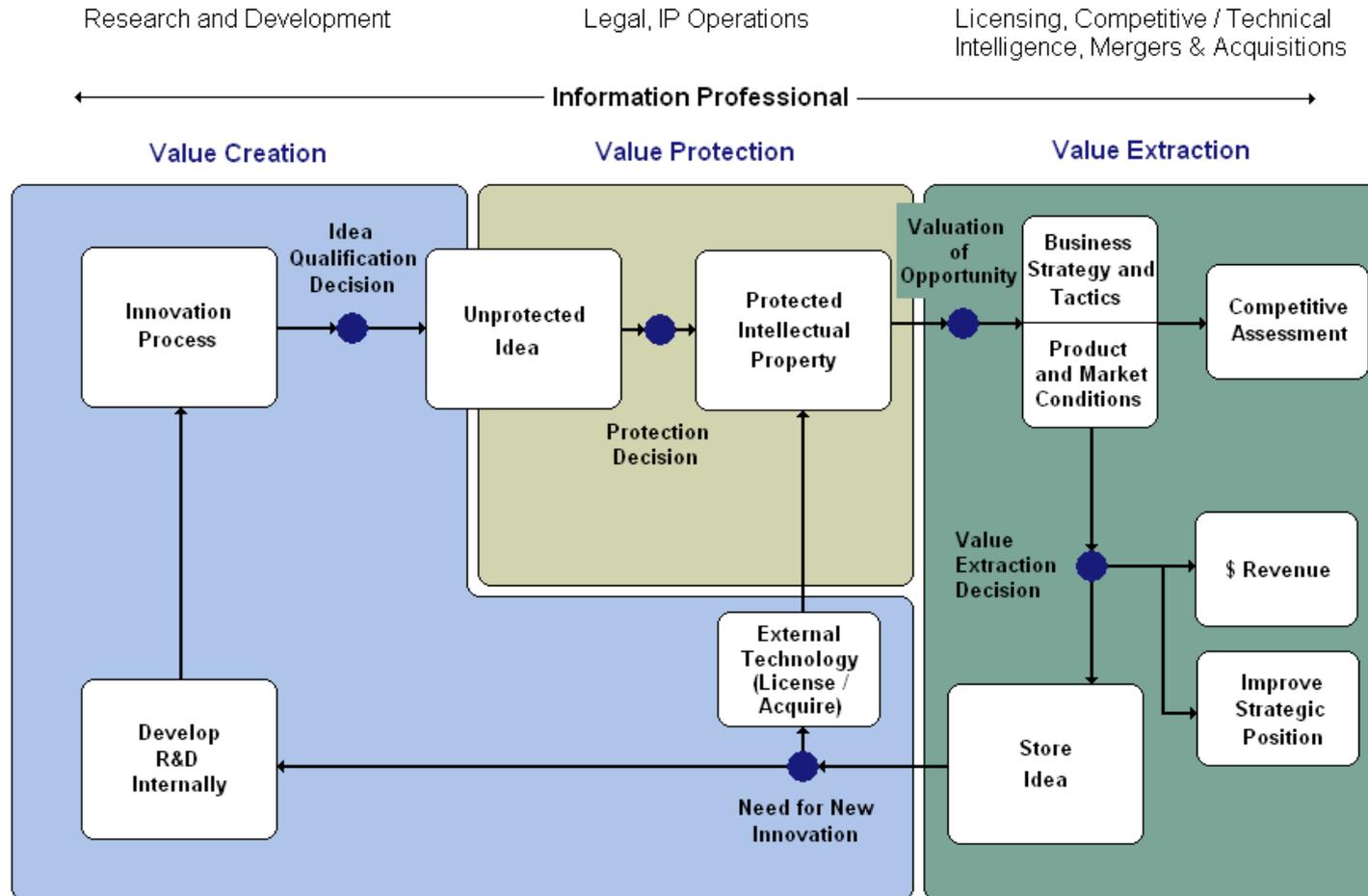
- **Global leader in information services industry with revenues of \$8.7 billion (2005)**
 - **69 % of revenues derived from electronic products and services**
 - **65% of revenues derived from subscription-based products and services**
- **40,000 employees in 45 countries**
- **20 million customers in over 130 countries**

Thomson Scientific

Thomson Scientific information based solutions keep academic, government, corporate and pharmaceutical R&D professionals at the forefront of their markets by providing must-have authoritative content with innovative technologies that assist with discovery, analysis, product development and distribution

The Innovation Cycle – A Model

Our goal is to minimize the attrition between your organization’s good ideas and the profitable products that you bring to market.



Acknowledgement: Brinks Hofer Gilson & Lione Seminar, 12 April 2005, "Translating IP and Business Strategy into Bottom Line", Suzanne Harrison

Why search patents?

“ ..published patent documents are the most comprehensive source of technical information in the world, for practically every area of technology”

The Patent Office, UK

“..over 70% of information contained within patents is never published anywhere else ”

Derwent Information

How can *you* make use of patent information?

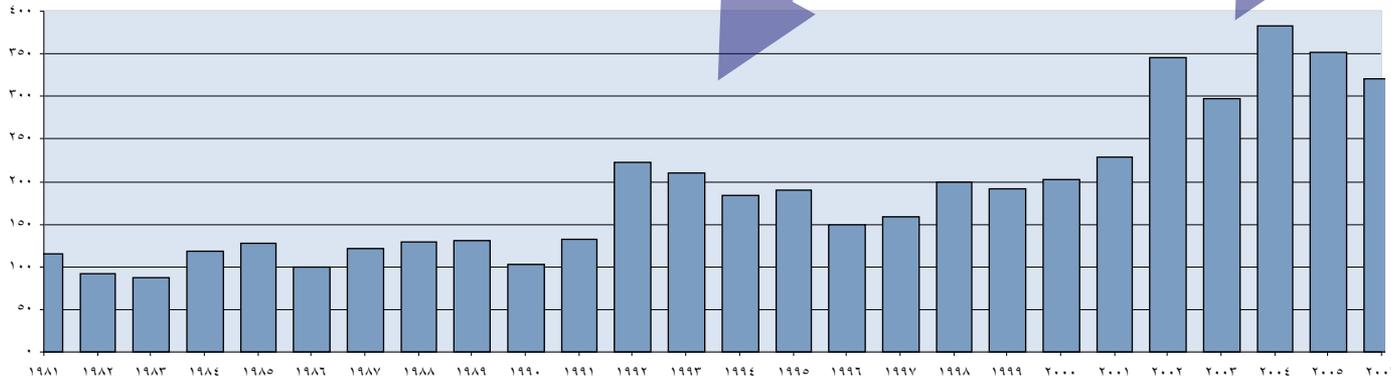
- Avoid duplication of R&D effort
- Avoid infringement of existing patents
- Find the solutions to your technical problems
- Survey the state-of-the-art
- Keep abreast of licensing opportunities
- Investigate an industry
- Identify your competitors and track their activities
- Trace the development of a technology or market
- Assess the strength or value of a company
- Headhunt the experts
- Monitor infringement risk to *your* portfolio of patents

Top IP Collections in Rotor Blade Technology – defined as filings in B64C 027 International Patent Classification

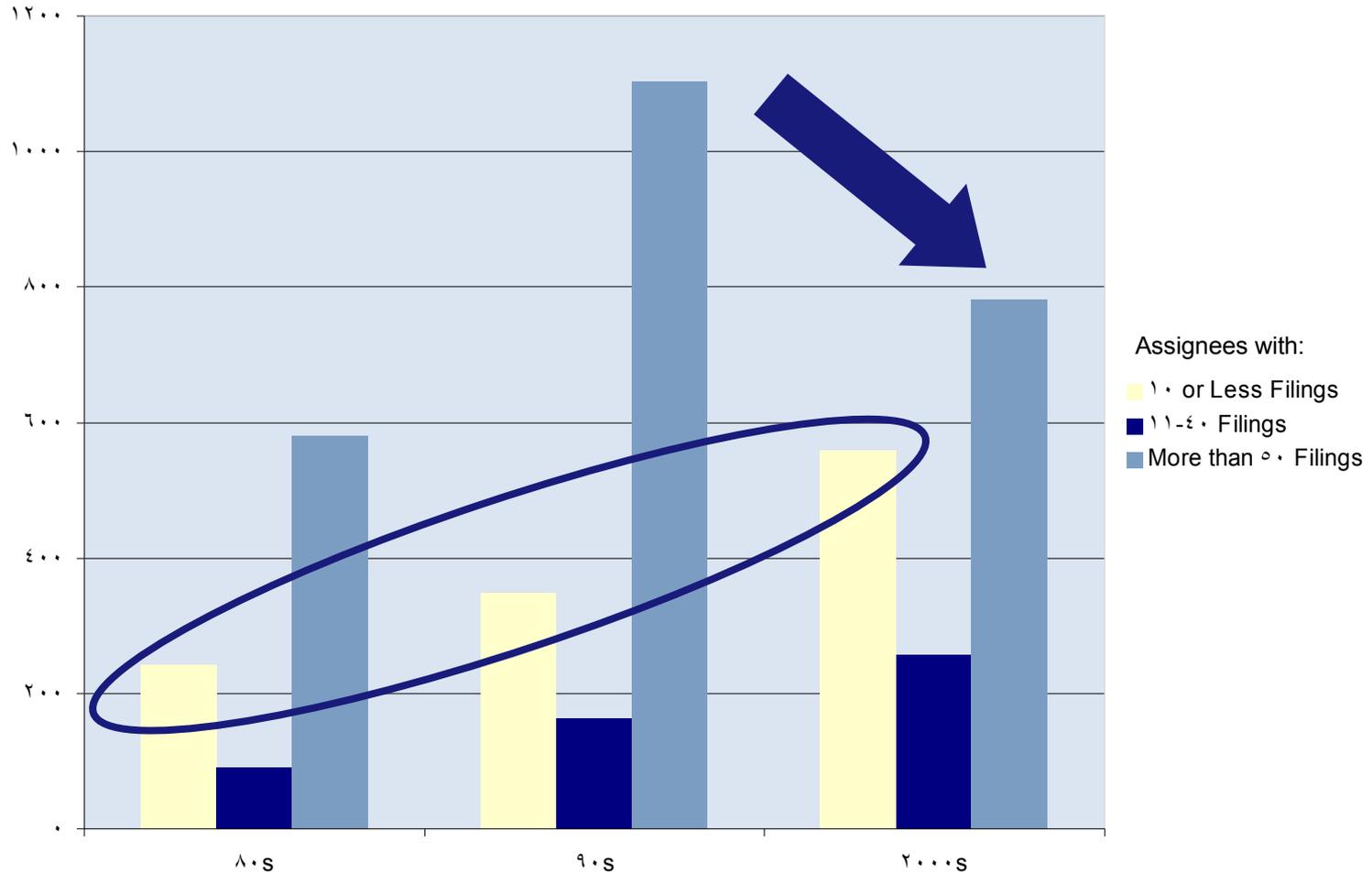
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
EADS	36	25	25	19	27	17	29	25	28	28	22	22	39	28	29	32	14	27	19	33	33	33	24	48	34	35
United Technologies	19	16	13	14	10	27	19	16	14	11	18	45	31	38	42	32	36	46	25	34	26	30	21	16	19	22
Boeing	4	10	9	5	8	8	4	8	4	2	7	2	9	7	7	7	15	15	9	17	8	11	8	13	16	16
Textron/Bell Helicopter	11	5	3	4	4	2	3	4	2	1	20	3	3	4	6	3	4	1	2		16	18	12	24	17	12
AgustaWestland	9	6	10	16	12	9	11	7	6	5	4	18	14	9	7	3	9	5	3	3	8	9	11	5	11	7
Mitsubishi				2		1		2	4	2	7	47	44	36	34	8	13	6	4	7	6	5	3	1	5	3
Fuji Heavy Industries									4	3	6	5	4	2	4	2	1	5	4		3	6	5	12	6	3
LORD Corporation								2	1		1	1	3	2	3	5	2	1	1	3	1	2	1	5	3	2
Advanced Tech Inst of Commuter-Helicopter																						16	12			
Yamaha							2		3	6	1	6	3									4	1		9	2

Mismatch?

Total Publication Velocity in Rotor Blade Technology



Relative Portfolio Size over time – is the competitive landscape becoming more splintered?

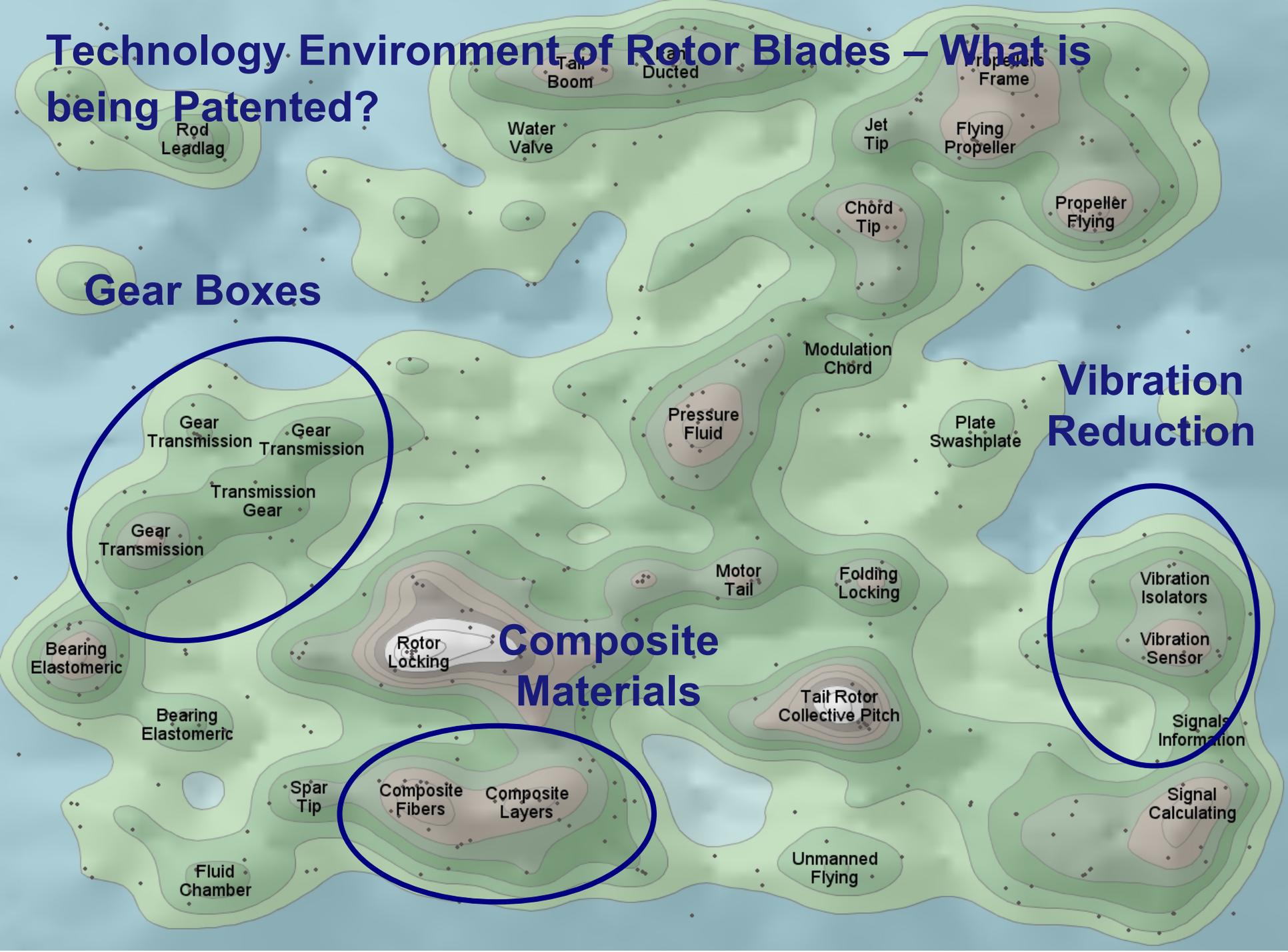


Technology Environment of Rotor Blades – What is being Patented?

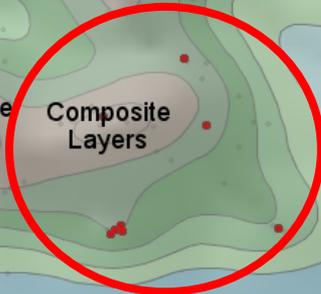
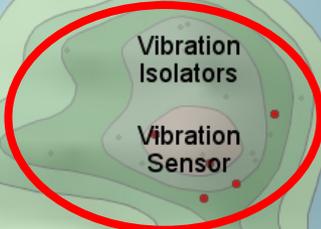
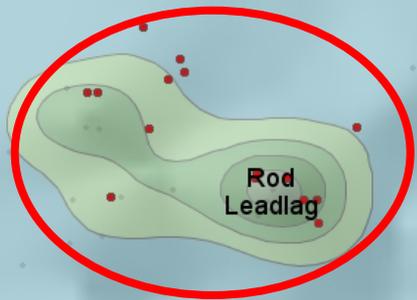
Gear Boxes

Vibration Reduction

Composite Materials

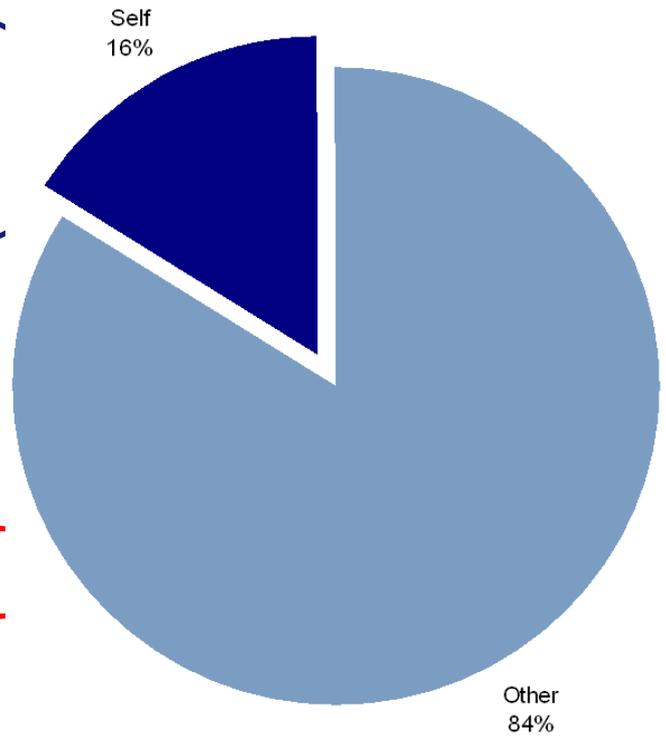


Where is AgustaWestland?



Who is Citing AgustaWestland's Portfolio? Who are the Technology Competitors?

EADS	116
United Technologies	106
Self	104
Boeing	39
Textron/Bell Helicopter	20
Fuji Heavy industries	18
ZF	10
Advanced Tech Inst of Commuter-Helicopter	10
Honeywell	9
LORD Corporation	9
New Venture Gear	8
General Dynamics	6
ONERA	6
Cartercopters	0



What are NVG Citing AgustaWestland with? Are there licensing opportunities?

Citing Patent #	Citing Document Title	Cleaned Citing Assignee	Citing Filing Date
US7440262B1	Continuously variable four-wheel drive transmission with traction control	New Venture Gear	11/09/2002
US7444418B1	Variable ratio range set for a transfer case	New Venture Gear	11/09/2002
US7466403B1	Worm drive axle traction assembly	New Venture Gear	11/09/2002
US7514167B1	Continuously variable transmission	New Venture Gear	11/09/2003
US7508233B1	Differential unit with worm gearsets	New Venture Gear	11/09/2003
US7509921B2	Continuously variable transmission	New Venture Gear	11/09/2003
US7645011B1	On-demand transfer case	New Venture Gear	11/11/2003
US7683010B2	On-demand transfer case	New Venture Gear	11/12/2004

Transfer casing converts power supplied by engine in two to drive both axles in 4WD cars

United States Patent [19] [11] **Patent Number: 4,783,023**
Jupe [45] **Date of Patent: Nov. 8, 1988**

[54] **HELICOPTER ROTOR SPEED CHANGING TRANSMISSION** [56] **References Cited**
 U.S. PATENT DOCUMENTS
 2,653,778 9/1953 Bennett et al. 244/6
 3,362,255 1/1968 Rocca et al. 74/665 L
 3,782,223 1/1974 Watson 74/665 L
 4,632,337 12/1986 Moore 244/60

[75] **Inventor: Robert J. Jupe, Yeovil, England**
 [73] **Assignee: Westland Group plc, Yeovil, England**

[21] **Appl. No.: 106,775**
 [22] **Filed: Oct. 13, 1987**

[30] **Foreign Application Priority Data**
 Oct. 28, 1986 [GB] United Kingdom 8625712

[51] **Int. Cl.⁴ B64C 27/14; B64C 27/26**
 [52] **U.S. Cl. 244/6; 244/11.19; 244/60; 74/665 L**

[58] **Field of Search 244/17.11, 17.19, 17.21, 244/17.23, 60, 6, 7 R, 7 A; 74/665 L, 665 N, 665 R**

Primary Examiner—Galen Barefoot
Assistant Examiner—Rodney Corl
Attorney, Agent, or Firm—Larson and Taylor

[57] **ABSTRACT**
 A helicopter has two engines adapted to drive a main sustaining rotor and a plurality of auxiliary propulsion means through a transmission system that is selectively operable to vary the relative speeds of rotation of the sustaining rotor and the auxiliary propulsion means depending upon operating conditions.

10 Claims, 4 Drawing Sheets

Shows potential overlap between automotive sector and AgustaWestland portfolio – supply of power from multiple sources to multiple outputs – two engine, two rotor

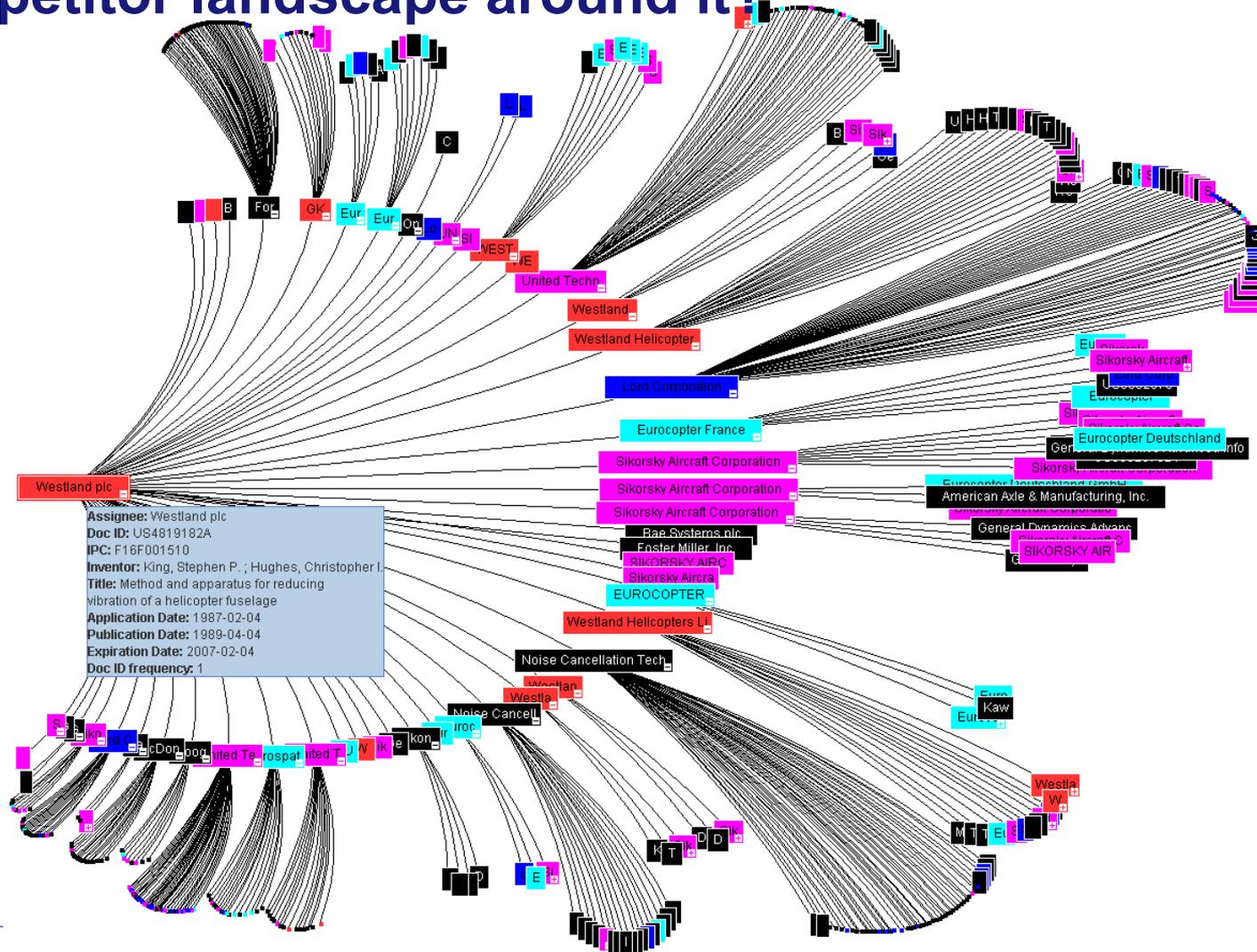
Top Cited Patents in AgustaWestland Portfolio – Which technologies are getting the most attention?

Document ID	Title	Year Issued	Cited by	Avg Cites by Year
US4819182	Method and apparatus for reducing vibration of a helicopter fuselage	1989	50	2.8
US5383133	Integrated vibration reducing and health monitoring system for a helicopter	1995	20	1.7
US5853144	Helicopter and method for reducing vibration of a helicopter fuselage	1998	11	1.4
US4297078	Helicopter rotors	1981	32	1.3
US4783023	Helicopter rotor speed changing transmission	1988	23	1.3
US5992793	Aerofoil	1999	9	1.3
US5219143	Active vibration control systems	1993	13	1.0
US4369019	Helicopter rotor comprising elastomer joints	1983	20	0.8
US4512717	Helicopter rotor	1985	18	0.8
US4375940	Rotor shaft with internal controls for helicopters	1983	18	0.8
EP482932	Helicopter rotor blades	1992	11	0.8
EP782956	Aerofoil	1997	7	0.7
US4342540	Articulated rotor for helicopters	1982	17	0.7
US4975022	Helicopter rotor blades	1990	11	0.7
EP351104	Helicopter rotor blades	1990	10	0.6

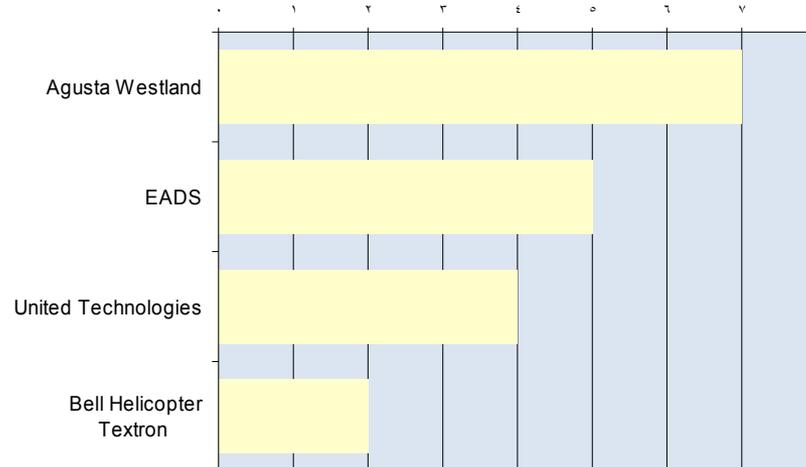
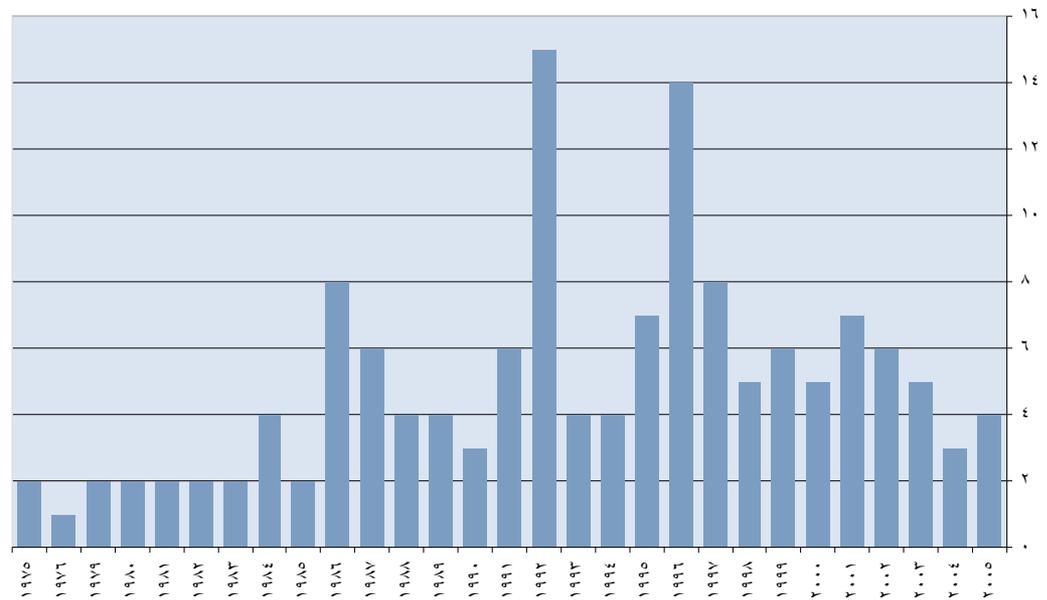
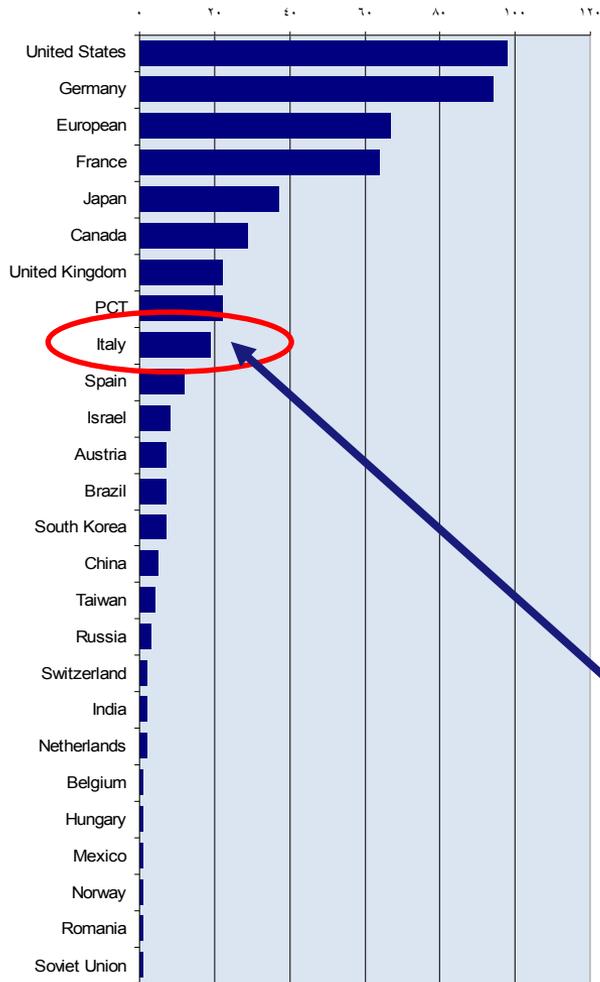
Vibration Control

**Older Rotor
Blade
Technology
highly cited due
to age?**

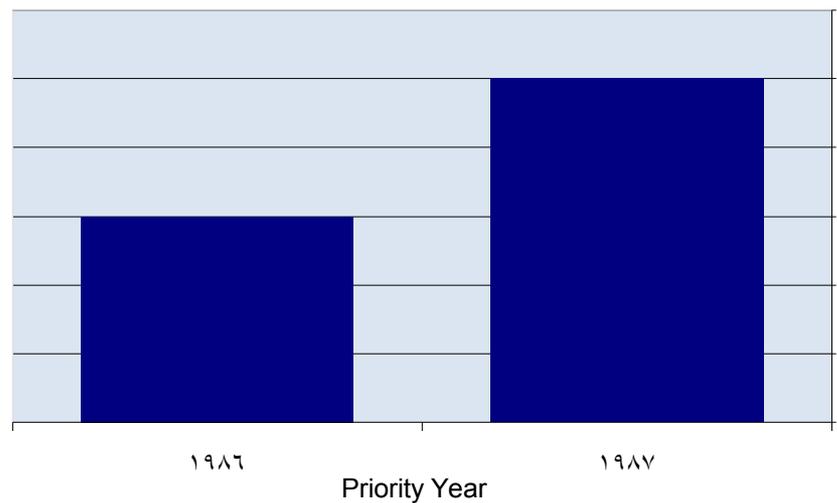
Top Cited AgustaWestland Patent – What is the Competitor landscape around it?



Prior Art Searching – Vibration Dampening for Rotor Blades

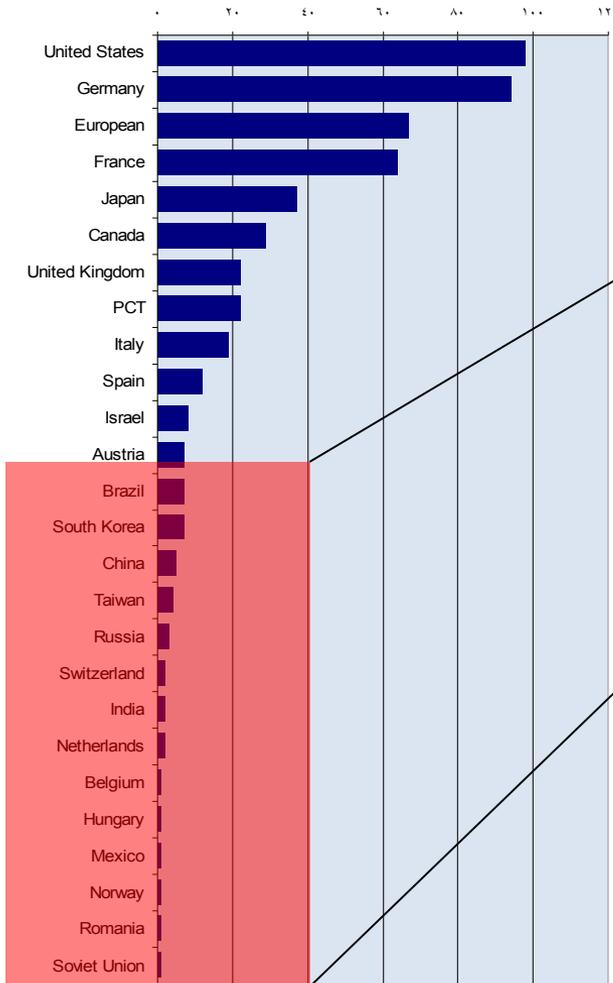


What material is about to potentially expire?



Agusta	
Westland	Attachment of helicopter rotor blade to hub - has stops to limit vertical oscillation of blade
EADS	Combination bearing for helicopter rotor - has spherical joint fitted outside cylindrical bearing and provided with vane generating hydraulic pressure
EADS	Damper for rotor blade - has hydraulic damper in strut behind trailing edge of flexible part of blade
Fuji	Damping lead-lag motion of helicopter rotor blades - involves bushing located in flex-beam and receiving elastomeric pivot coupled to cylindrical dampers on beam
EADS	Helicopter rotor flexure arm - has central section with shear plate surrounded by damping gel inside fibre bundle reinforced elastomeric matrix
EADS	Helicopter rotor with single blade - has damping device whose active plane is inclined w.r.t. blade swivel plane by specified angle
EADS	Hydraulic damper and elastic restraining strut - has annular elastic spring enclosing expansion chamber for fluid displaced from double acting piston damper
EADS	Vibration damper for helicopter rotor hub - is mounted so that damper material is subjected to shear force during operation

Who is patenting in Minor Countries?



11	↑↑↑	UNITED TECHNOLOGIES
4	↑↑	BELL HELICOPTER TEXTRON
3	↓↓↓	EADS
1		DYNAMIC ENG
1		GENERAL DYNAMICS
1		HUTCHINSON
1		SMITHS AEROSPACE
0	↓	AGUSTA WESTLAND

Arrows indicate that United Technologies' minor country patenting is unexpectedly high compared to the rest of the assignees in the prior art, whilst EADS and AgustaWestland are lower than average.

Business information and news can add to the picture

00005766 **Corptech ID:** 108F4C
Record Updated: December 27, 2006
Sales Data Updated: December 31, 2004

Company Name: Magna Drive Train Division
 1775 Research Dr
 Troy, MI 48083-2161
 USA

Phone: (248) 680.4900
Fax: (248) 680.4924
URL: http://www.newventuregear.com

Language: ENGLISH **Record Type:** DIRECTORY **Document Type:** COM

Alternate Company Names:
 formerly known as **New Venture Gear, Inc.**

Sales:
 Estimated annual sales of \$1115.1 million (12 months ending December 31, 2004)

Employees: 4000 employees (as of December 31, 2004)

Executives:
 Mr. Pat Cerullo - CEO/President
 Mr. John Colainne - CFO (C.E.O.)
 Mr. Dave Strachan - Finance (Finance)
 Mr. Mike Nowiki - Human Resources Executive
 Mr. Greg Deveson - President

Company Directories can give you valuable basic information.

The screenshot shows the DialogWeb interface with a search for 'NEW VENTURE GEAR'. The results are sorted by 'Publication Date - Descending' and show 64 records. The first few results are:

- [FOR THE RECORD](#), Post Standard, November 29, 2005, NewsRoom 2005 (File 992)
- [Magna completes acquisition of New Venture Gear](#), Datamonitor, September 30, 2004
- [Magna completes acquisition of New Venture Gear](#), Datamonitor Industry News Wire, September 30, 2004
- [Magna set to buy Syracuse parts maker](#), National Post (Canada), September 30, 2004
- [Dow below 10,000](#), Montreal Gazette (Canada), September 28, 2004, NewsRoom 2004
- [New Venture Gear obtains United States patent](#), Biotech Patent News, July 1, 2004
- [Prompt response avoids liability for hostile work environment](#), (C.A.B. International) JTB
- [UAW Next Hurdle in Magna Deal \(Brief Article\)](#), Reuters, September 29, 2004
- [Magna in messy negotiations with UAW over new deal](#), Reuters, September 29, 2004
- [Magna to buy Venture Gear from Chrysler \(Brief Article\)](#), Reuters, September 29, 2004
- [Magna to buy Daimler gear operations](#), REPO, September 29, 2004
- No picklist format is available for this record.

Search archived news items for details of the acquisition.

News on Magna

Magna completes acquisition of New Venture Gear

Datamonitor Industry NewsWire
Thursday, September 30, 2004

Journal: ... Record Type: Fulltext

Recent news about Magna

Selected news story with further details.

- [Magna to close Traer subsidiary next week](#), NewsRoom Current (File 990)
- [MG Globe says Magna Int'l on a Russian](#), May 29, 2007, NewsRoom Current (File 990)
- [bellwetherreport.com: Exploring the Future Trends of Magna International Inc.](#), M2 PressWIRE, April 18, 2007, NewsRoom Current (File 990)
- [MG Globe says Magna Int'l shifts into restructuring gear](#), Canada Stockwatch, December 7, 2006, NewsRoom 2006 (File 991)
- [INDIA'S ANTEK AUTO FORMS JV WITH CANADA'S MAGNA POWERTRAIN](#), Asia Pulse, November 2, 2006, NewsRoom 2006 (File 991)
- [Antek, Magna form auto parts JV](#), Economic Times (India), November 1, 2006, NewsRoom 2006 (File 991)
- [LNR NP says Magna, Linamar see peers hurting](#), Canada Stockwatch, September 25, 2006, NewsRoom 2006 (File 991)
- [MG NP says Magna, Linamar see peers hurting](#), Canada Stockwatch, September 25, 2006, NewsRoom 2006 (File 991)
- [LNR Globe/AP say Magna, rival hear Ford talking to GM](#), Canada Stockwatch, September 19, 2006, NewsRoom 2006 (File 991)
- [MG Globe/AP say Magna, rival hear Ford talking to GM](#), Canada Stockwatch, September 19, 2006, NewsRoom 2006 (File 991)
- [Magna in overdrive; A solid business plan and strong guiding principles have helped Magna leave its auto-parts industry](#), Motor-Digest, June 23, 2006, NewsRoom 2006 (File 991)
- [Canadian company Magna International intends to build a plant producing car components in Shushary near St.-Peterburg](#), Motor-Digest, June 23, 2006, NewsRoom 2006 (File 991)
- [Magna fields Russian supply offers](#), Automotive World, June 22, 2006, NewsRoom 2006 (File 991)
- [Magna's New Process Gear offers incentives to cut 250 jobs at U.S. factory](#), Canadian Press, May 31, 2006, NewsRoom 2006 (File 991)

Investment Reports provide valuable information

Company

North America Canada
Consumer Autos & Auto Parts

Deutsche Bank



25 May 2007

Magna Ir

Reuters: MGA.N Bloomberg:

ATIVO RESEARCH

A BIR Research Provider Report

June 1, 2007 Page 1 of 4

Thoughts dinner

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Magna International Inc (USR)

NYSE: MGA, \$90.09
Canada

SELL

Downgraded 3/3/07

Ativo Research's Investment Conclusion

The Ativo research team currently projects that Magna will underperform the market over the next 6 to 12 months. Our decision is based on the stock's relationship to its intrinsic value as well as an assessment of the momentum of the company's fundamentals.

2 takeaways from the M
There were 2 key takeaw corporate governance is proposed transaction w management sounded ve

Governance, while not i
The Stronach family's cor that will control 68.8% of board members; non-aut

The Russian opportunit
In discussing the Russie vehicle could be higher revenue from the Russian

More disclosure needed
While we see MGA's sha

Buy	Most Favorable
Hold	Favorable Neutral
Sell	Unfavorable Most Unfavorable

Current Recommendation (3/3/07) **Unfavorable**
Previous Recommendation (5/27/06) **Neutral**

BIR Stock Classifications

Region	North American
Sector	Consumer Durables
Industry	Auto Suppliers
Asset Class	Large-Cap
Investment Style	Value
Risk Profile Rank	Below Average Risk
Financial Quality	Above Average Quality

May 22, 2007 -- Best Independent Research --
Magna International Inc. (MGA) is a global automotive integrator and system and component manufacturer, serving car and light truck OEMs. This Canadian firm designs and manufactures exterior and interior systems, electro-mechanical devices, stamped and welded metal parts, and various powertrain, fueling, and cooling systems. It operates seven divisions: Cosma, Decoma, Magna Donnelly, Intier Automotive, Magna Drivetrain, Tesma, and Magna Steyr. Geographically, Magna accrues 43% of its revenue from Europe, while the U.S. and other countries contribute 21% and 36%, respectively. IMPORTANT: On 5/10/07, it was reported that a unit of Russian industrial

cyclical in nature. The consumer demand for automobiles is sensitive to changes in certain economic and political conditions, including interest rates, and oil and energy prices. To counter these challenges, the company has decided to reduce its operating cost at all levels. For instance, Magna has set up a production facility at Hermosillo, Mexico, to support various stampings for the launch of the Ford Fusion, Mercury Milan and Lincoln Zephyr. Magna has strengthened its presence in the Asia-Pacific region, starting two new facilities and establishing new sales and engineering offices in Shanghai, China.

Acquisitions and Alliances

For fast-paced growth and to increase profitability, Magna adopts inorganic growth and partnership route. In August, the company inked a pact with Dr. Ing. h.c. F. Porsche AG, Stuttgart, to acquire Porsche Engineering Services, Inc., located in Troy, New York. This is expected to strengthen Magna in catering to the needs of OEMs in North America. It also bought the Magna Golf Club, Aurora, Ontario, from a subsidiary of Magna Entertainment Corp. in a CDN \$50 million deal.

Digging Deep for Prior Art

Ranked Database Index Results

'S ROTOR()BLADE? ? AND TRANSMISSION' in databases 2, 6, 8, 34, 35, 60, 63, 9

Select All
 Clear Selections

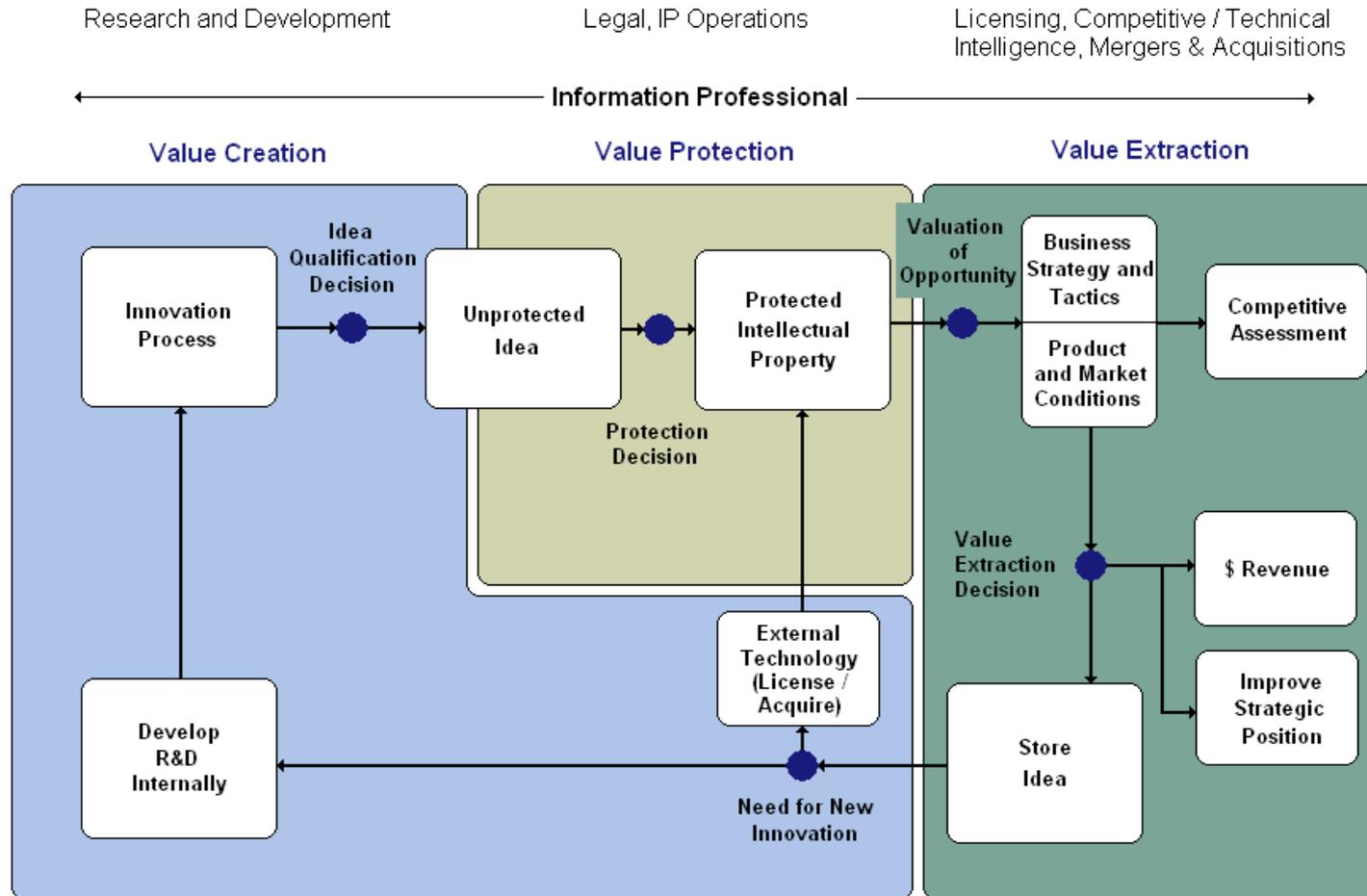
Sci/Tech
Databases with
results for Rotor
blades AND
transmission

File	Database Name	Hits
<input type="checkbox"/> 95:	TEME - Technology and Management	145
<input type="checkbox"/> 108:	CSA Aerospace & High Technology Database	131
<input type="checkbox"/> 589:	FI Defense Market Intelligence Reports	91
<input type="checkbox"/> 6:	NTIS - National Technical Information Service	62
<input type="checkbox"/> 144:	PASCAL	57
<input type="checkbox"/> 8:	Ei Compendex®	46
<input type="checkbox"/> 99:	Wilson Applied Science & Technology Abstracts	31
<input type="checkbox"/> 388:	PEDS: Defense Program Summaries	24
<input type="checkbox"/> 104:	AeroBase	17
<input type="checkbox"/> 2:	Inspec (1898-present)	17
<input type="checkbox"/> 34:	SciSearch® - a Cited Reference Science Database - 1990-	5
<input type="checkbox"/> 63:	Transportation Research Information Services (TRIS)	4
<input type="checkbox"/> 60:	ANTE: Abstracts in New Technologies and Engineering	3
<input type="checkbox"/> 35:	Dissertation Abstracts Online	3
<input type="checkbox"/> 266:	Federal Research in Progress (FEDRIP)	1
<input type="checkbox"/> 92:	IHS International Standards and Specifications	1

There are 16 databases matching your statement 'S ROTOR()BLADE? ? AND TRANSMISSION'.

Innovation

How could better Intellectual Property Management across different business units increase the efficiency of innovation in your organisation?



Acknowledgement: Brinks Hofer Gilson & Lione Seminar, 12 April 2005, "Translating IP and Business Strategy into Bottom Line", Suzanne Harrison

Summary

- We showed you how patent and non-patent information can be used to improve the innovation process and for competitive intelligence
- Through a case on Rotor Blade Technology and the company AugustaWestland we illustrated how you can find answers to questions such as
 - How can we identify technology licensing to other markets? Provide licenses to suppliers or customers? Engage in cross-licensing?
 - How do we avoid R&D duplication, internal or external?
 - How can we take advantage of potential cross-over technologies owned by other internal or external companies?
 - How much are we looking to emerging markets, e.g. South America, Eastern Europe, Africa? How much are the competitors looking at these markets?
 - How do I learn more about my competitors
- We hope you have been inspired to improve the processes in your own organisation!

Customer Statement

Thomson's offering has "...increased the productivity not only of my own department, but of all Honeywell users requiring access to patent information. As a result, we have been able to continue to grow and expand our service without adding additional headcount, resulting in cost savings across the company."

David Hoiriis, Chief IP Counsel, Honeywell International Inc.

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<http://scientific.thomson.com>