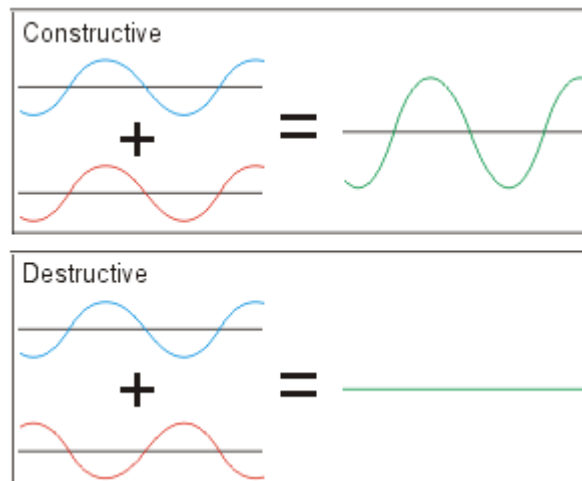


Sound cancelation by destructive Interference

Canceling sound by creating an “antisound” wave which will absorb the original sound wave.
Used to silence unwanted sounds



Headlines

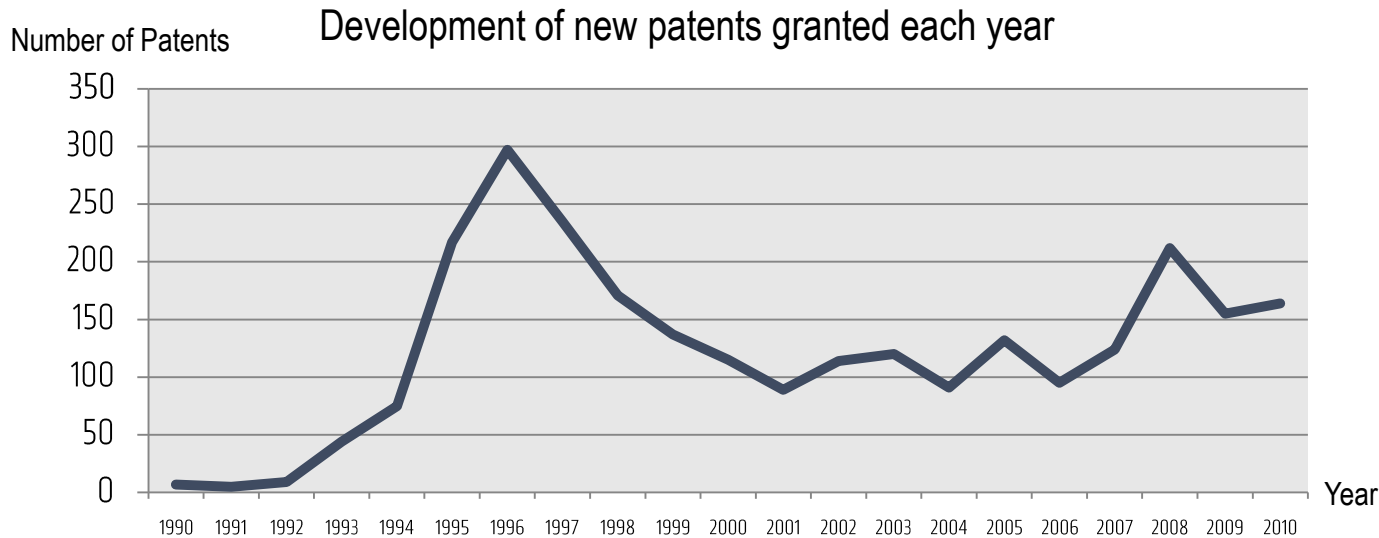
- Low patent activity in open rooms
 - Because the anti phase sound amplifies the noise in open spaces (by creating constructive interference, outside the “silence zone”)
 - Some solutions points towards ultrasound as a way of controlling the spread of the anti phase sound
 - One use of the technology and open space is an application you apply on the wall in apartments and the device is supposed to dampen the sound of the neighbors
- Main patent activity seems to be for vehicles and headphone/sets (confined spaces)
- Main owners of intellectual property rights are:
 - Panasonic
 - Nissan
 - Honda
 - Toshiba
 - Fujitsu

Technology definition:

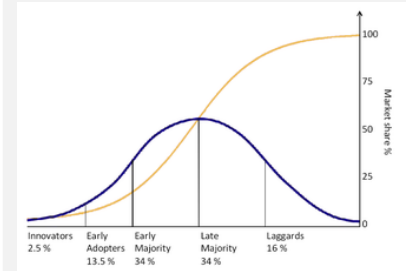
Methods or devices for protecting against, or for damping, noise by electro-acoustically regenerating the original acoustic waves in anti-phase

Number of Patents: 2635

Development of patent activity is inconclusive, after 1996 there is a drop, and patent activity has been slightly increasing. But no signs of the normal bell curve/s-curve development which characterize very profitable technology areas.



Successful technologies normally develops in S-curves, this trend can also be seen in the patent activity



Top 30 IPR owners (Number of patents)

Panasonic	(149)
Nissan Motor	(122)
Honda Motor	(107)
Toshiba	(68)
Fujitsu Ten Ltd	(65)
Sony Corp	(60)
Fujitsu Ltd	(49)
Hitachi Ltd	(48)
TOA Corp	(46)
Shinko Electric Co Ltd	(45)
Toyota Jidosha	(40)
Yamaha Corp	(40)
Yanmar Diesel Engine	(36)
Fuji Heavy ind Ltd	(35)
Mitsubishi Jukogyo	(35)
Fujikura Ltd	(34)
Nippondenso co Ltd	(31)
Alpine KK	(30)
Sharp KK	(30)
Audio Technica	(29)
Matsuda KK	(28)
Matsushita Electric Ind co Ltd	(28)
Siemens VDO Automotive Inc	(28)
Noise Cancellation Technologies	(27)
Bose Corp	(26)
Kubota Corp	(26)
Mitsubishi Electric Corp	(26)
Wolfson Microelectronics PLC	(26)
Tokai Rubber Ind Ltd	(25)
NEC Corp	(23)
Pioneer Electronic Corp	(22)
Panasonic Corp	(20)
Unisia Jecs Corp	(20)

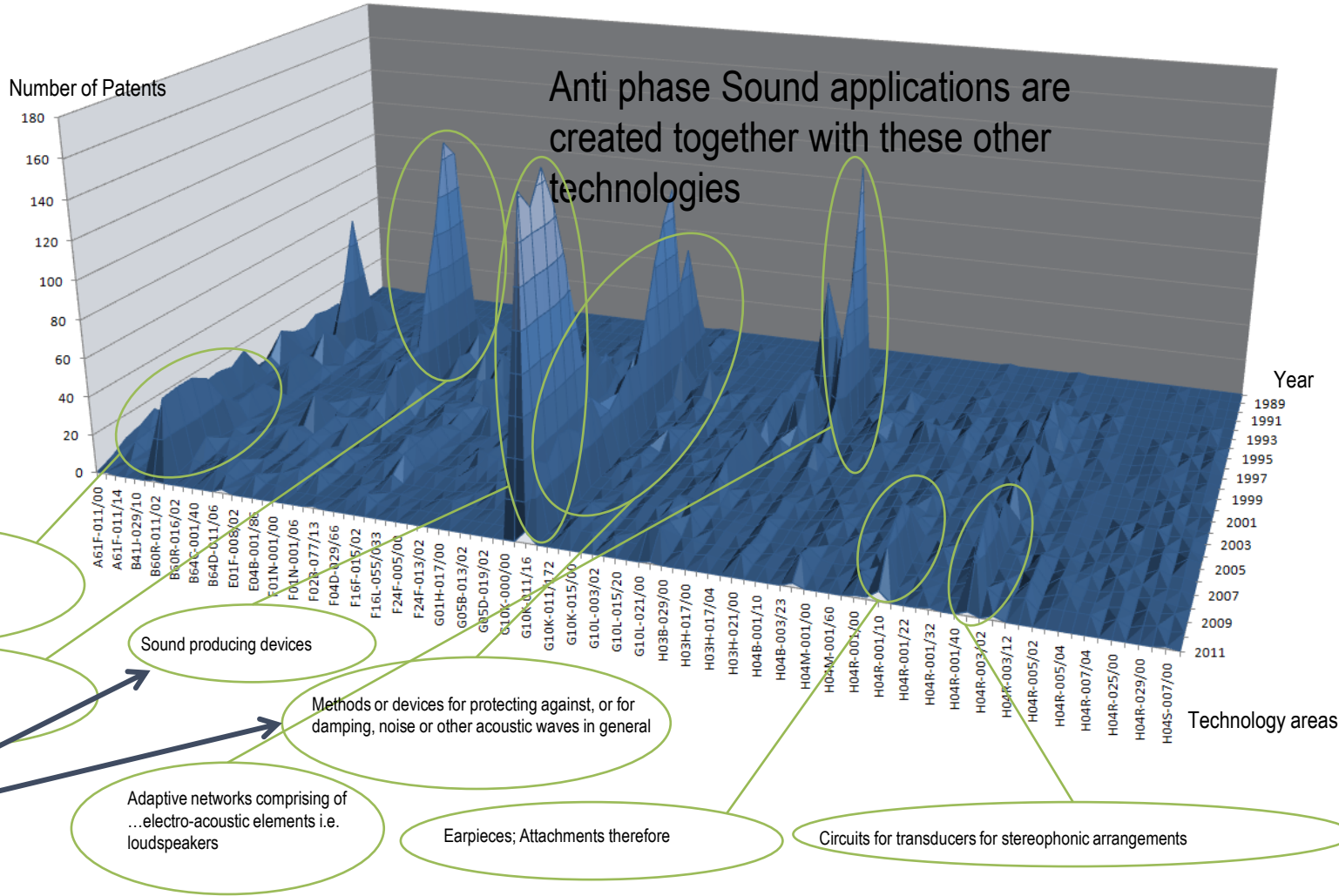
The IPR owner list of a technology can help create a buyer list when looking for industrial buyers. The list can also be created with a time perspective, which will enable you to see who is active right now in the technology area. An information which might also encourage competitors to buy a company to gain a technological advantage in the competition.

IPR owners are dominated by Asian companies, especially within the car industry or their suppliers, when looking at the recent patents the overall impression is that the patented applications record noise in the car and play the anti phase sound in the car stereo system. Bear in mind that this is a broad assumption from scanning a lot of patents.

A smaller segment of the patent owners is companies like Sony who uses this technology in their headset/earphone applications.

Very few patents include open spaces their descriptions, which could be a sign that there are some technological problems in using this technology in open spaces.

The fitness map shows what technologies has been combined with sound cancelation patents. And the development of combinations over the years.



IPR owners in each separate category can be identified if needed

Top 10 Inventors	(Number of patents)	Main IPR owner (company/assignee)
Inque T	(56)	Honda Motors (Car sound dampning patents)
Takahashi A	(53)	Honda Motors (Car sound dampning patents)
Sakamoto K	(40)	Honda Motors (Car sound dampning patents)
Kobayashi Y	(38)	Honda Motors (Car sound dampning patents)
Nakamura Y	(29)	Panasonic (Motor sound dampning patents)
Asada K	(23)	Sony (Headsets/headphones)
Takamatsu Y	(16)	Nissan Motors
Ebato A	(15)	Toshiba (Various applications, head set, cancel neighbor sounds)
Onishi M	(15)	Honda/Panasonic (Vehicle silence)
Bachmann H	(14)	ANOCYSYS AG Some room silence patents (until 2008), company don't exist now