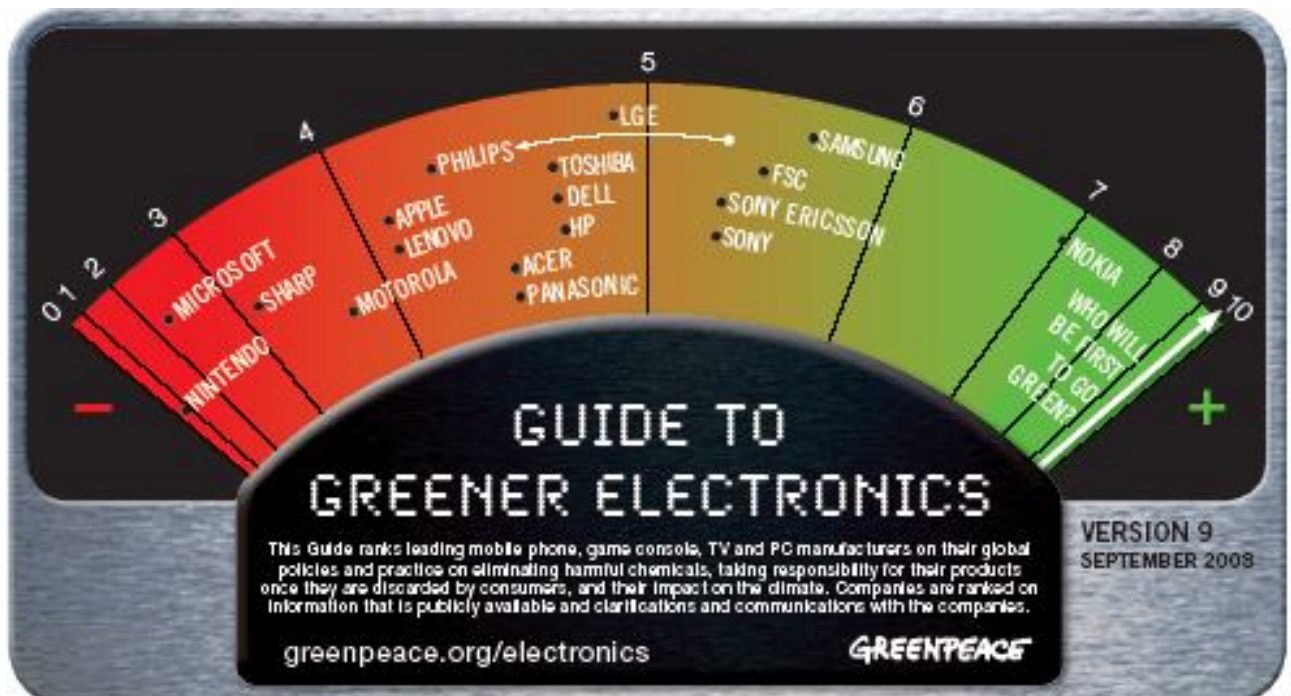


## คู่มือสินค้าอิเล็กทรอนิกส์สีเขียว – กันยายน 2551 (ฉบับที่ 9)



### Nokia

Nokia is back in 1<sup>st</sup> place with a total score of 7, having had its penalty point – imposed since v.6 of the ranking guide – lifted. This follows a survey undertaken by Greenpeace India in July 2008 which examined the take-back programmes in India of most of the ranked brands. The results revealed that Nokia has one of the best take-back programmes in India, even though there are still problems in the smaller cities. See: <http://www.greenpeace.org/india/press/reports/take-back-blues>

Nokia scores very well on toxic chemical issues, launching new models free of PVC since the end of 2005 and aiming to have all new models free of brominated flame retardants and antimony trioxide by the end of 2009.

Nokia does quite well on e-waste issues with a comprehensive take-back programme that spans 85 countries providing almost 5000 collection points for end-of-life mobile phones. However, its recycling rate of 3-5% is very poor and more information is needed on how Nokia calculates these figures.

Nokia's energy score is boosted by sourcing 25% of its total energy needs from renewable sources in 2007 and a target to increase use of renewables to 50% by 2010. Nokia also scores top marks (doubled) for all its mobile phone chargers meeting Energy Star and exceeding the Energy Star requirements by 30-90%.



## **Samsung**

Samsung comes in second place with 5.7, scoring well on chemicals and waste criteria.

Since November 2007, all new models of LCD panels are PVC-free, important in driving the market to phase out PVC, with Samsung being the #1 supplier globally. The company has launched partially BFR-free models of mobile phone and developed halogen-free memory chips and semiconductors for certain applications.

Samsung's score on e-waste is helped by getting top marks for reporting recycling rates of 137% for TVs (based on past sales 10 years ago, the average life span, since when Samsung's TV sales have increased 10-fold), 12% for PCs (based on 7 year lifespan) and 9% for mobile phones (based on 2 year lifespan). However to stay on top marks, Samsung needs to put a reality check on the EU figures of e-waste recycled. It also scores well on its use of recycled plastic, which is 16.1%, though only 0.2% is post-consumer plastic, with a goal to increase to 25% by 2008.

On energy, Samsung score improves, gaining points for disclosing total GHG emissions from its operations in Korea (the majority of its operations) and double points on the energy efficiency of its battery chargers, all of which meet and 99.4% of which exceed the Energy Star standard.

## **Fujitsu Siemens Computers**

Fujitsu Siemens Computers leaps ahead into 3<sup>rd</sup> place – up from 15<sup>th</sup> in v.8, with a score of 5.5 points, most of which are gained on the toxic chemical criteria. FSC sells a range of green-certified products, which use halogen-free flame retarded plastics and halogen-free circuit boards for mainboard and power supply, but there is no information on PVC-free components. FSC has finally put a timeline of end of 2010 for the complete elimination of PVC and BFRs in all its products.

FSC scores poorly on the e-waste criteria. The only voluntary take-back service offered by FSC is in South Africa. The company reports a recycling rate of 22.5% for Germany based on past sales, using a 7-year average lifespan of a computer, and over 30% in 13 other countries where its products are sold.

On energy, FSC improves its score, getting top marks for its political support for global cuts of greenhouse gas emissions. It also scores points for reporting that 27% of consumer PCs meet the Energy Star 4 standard, 75% of Business Line professional notebooks and 58% of PCs meet ES4. Of these models, 100% exceed the Energy Star requirements by 26 – 57%.

## **Sony Ericsson**

Sony Ericsson drops to 4<sup>th</sup> position with a score of 5.3. It is the first company to score almost top marks on the chemicals criteria, missing this target by having unreasonably high threshold limits for brominated flame retardants in products that are allegedly BFR-free. All SE products are already PVC-free. SE has already met the challenge of the new criterion on chemicals, by banning antimony, beryllium and phthalates from new models launched since January 2008.

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The company scores relatively well on energy criteria because all of its products meet and exceed the Energy Star standard. It is now reporting CO2 emissions from its own manufacturing and product transportation.

Sony Ericsson falls down on e-waste issues scoring badly on all the criteria. It reports a pitiful recycling rate of 1%-13%.

## **Sony**

Sony drops to 5<sup>th</sup> place with the same total score of 5.3 as Sony Ericsson, but with fewer points on the chemicals criteria, which determines the ranking when total scores are tied. Sony still does relatively well on chemicals, its score boosted by having models on the market that are partially free of PVC and BFRs, including three models of video recorders and many models of the Personal Computer VAIO, "WALKMAN", Camcorder and Digital camera.

On waste issues, Sony scores relatively high by supporting Individual Producer Responsibility and providing some voluntary take-back and recycling of the e-waste generated by its branded products, although not much in non-OECD countries. It is reporting a recycling rate of 53% based on past sales of TVs and PCs, but this information is only for Japan.

On energy Sony still has room for improvement; it scores points for disclosing externally-verified greenhouse gas emissions for over 200 sites, reporting on its use of renewable energy (1.02% as a proportion of total electricity use) in 2006 and committing to absolute cuts in GHG emissions. Sony is now reporting on energy efficiency: all AC adapters of "VAIO" PCs meet the requirements of California's Energy Efficiency Regulations. However, the reporting period for energy efficiency of PCs is incorrect and Sony has still to report on the energy efficiency of its TV models, put on the market since July 2005, the latest Energy Star standard for TVs.

## **LG Electronics**

LG Electronics soars to 6<sup>th</sup> position from 16<sup>th</sup> in v.8, with a score of 4.9, gaining most of its new points on e-waste and energy criteria.

LGE has launched new models of mobile phones with halogen-free housings, packaging and main printed wiring board. It now provides a timeline of 2012 for eliminating phthalates and antimony – but only in new models of mobile phones.

LGE improves its score on e-waste by starting a take-back programme for its products in the US, including LG, Zenith and GoldStar brands of TVs. It also gains points for reporting its use of (post-industrial) recycled plastic across all LGE products as 11%, with plans to increase this to 25%, but without a timeline. The company has compiled figures for e-waste recycling in Europe, Asia and North America and reports a recycling rate in relation to current sales for all regions. Globally, the recycling rate for total IT and telecom equipment is 13.2% and consumer equipment (that includes TVs) is 13.7%.

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LGE now scores points on the energy criteria for reporting emissions of GHGs from its factories in Korea and for information that 100% of its chargers exceed the Energy Star standard (v.1.1) by 50%. But data provided for energy efficiency of TVs is for models introduced in 2007, not since the latest Energy Star standard, which came into effect July 2005.

## **Toshiba**

Toshiba drops from 6<sup>th</sup> place to 7<sup>th</sup> with 4.7, although it scores more points than in v.8.

Toshiba does well on chemicals, committing to introduce alternatives to phthalates, beryllium and antimony by 2012 – though only in its PCs, for which it loses one point. It has also launched models of laptops with circuit boards free from brominated flame retardants (BFRs), EcoMark-certified products without PVC, and makes other components and parts that are free from these harmful substances.

The company does not do as well on e-waste, although it reports a recycling rate of 12% for a group of 5 types of products that includes TVs, PCs and 3 types of home appliances, but this rate is based on current (not past) sales.

Toshiba improves its score on energy, gaining points for supporting global cuts in GHG emissions and greater cuts for industrialised countries as well as for reporting that 93% of new PC platforms developed since July 07 can be configured to meet Energy Star 4. However, so far Toshiba fails to report on the energy efficiency of its TVs. The company also scores points for disclosing greenhouse gas emissions from its own operations and committing to an absolute reduction in GHG emissions.

## **Dell**

Dell drops to 8<sup>th</sup> place, from 5<sup>th</sup> in v.8 with middling scores on chemicals and e-waste and energy issues.

The company fails to do better on chemicals because it has yet to put on the market products free of PVC and BFRs or commit to phasing out additional chemicals. On waste, Dell reports a recycling rate of 12.4%, based on sales 7 years ago.

On energy Dell gets points for reporting that over 42 % of laptops and 57 % of desktops (consumer and client) introduced since 20 July 2007 offer configurations that meet or exceed Energy Star requirements. Dell also scores points for disclosing its GHG emissions from global operations, gaining an extra point for getting the emissions third party verified.

## **HP**

HP remains in 9<sup>th</sup> place but its score has increased to 4.7 points, gaining points on energy criteria, but losing a point on e-waste. HP scores evenly across all three issues. On chemicals, although HP provides a timeline for eliminating polyvinyl chloride (PVC) plastic and all brominated flame retardants (BFRs) by 2009, it is



only in computing equipment – not for its entire product portfolio. HP has yet to put on the market products that are entirely free from the worst substances.

On e-waste, HP reports a reuse and recycling rate in 2007 of 15% of relevant sales and some use of recycled plastics. However, HP loses a point for favouring business customers over individual consumers when providing information on what to do with discarded products.

HP discloses externally verified greenhouse gas emissions from its own operations and one stage of the supply chain: product transportation. It has made a commitment to reduce greenhouse gas (GHG) emissions from HP-owned and HP-leased facilities worldwide to 16 percent below 2005 levels by 2010. HP's overall goal is to reduce the combined energy consumption and associated GHG emissions of HP operations and products to 25 percent below 2005 levels by 2010. HP gains a point for reporting a renewable energy use of 2% of global energy consumption and for reporting that more than 87% of HP Notebook PC platforms and 32% of Desktop PC platforms offer Energy Star compliant configurations.

### **Acer**

Acer increases its score slightly to 4.5 points but now takes 11<sup>th</sup> place. It scores most points for its efforts on toxic chemicals with a commitment to phase out all phthalates, beryllium and compounds and antimony and compounds in all new products by 2012, although it does not yet have any products that are free of PVC and BFRs on the market.

Acer scores poorly on e-waste even though it is reporting a recycling rate of 31.7% based on past sales, for desktops and notebooks sold and recycled in Taiwan. It also scores top marks (for now) on support for Individual Producer Responsibility, because the company has visited SWICO (Switzerland), El Kretson (Sweden), Hellmann (German), ICT-Milieu & NVMP (Netherlands), and WEEE Forum (Belgium) to collect Acer's recycling amount and related information.

On energy, Acer scores points for providing data on its greenhouse gas emissions in Taiwan and for reporting on the energy efficiency of its products; since 20 July 2007, 75% of Acer's notebook PCs, 10% of desktop PCs and 100% of LCD monitors have been verified as Energy Star compliant.

### **Panasonic**

Panasonic increases its score to 4.5 points but drops to 11<sup>th</sup> place. It earns most of its points on chemicals issues; it has added six more product groups to its many models of PVC-free products, including DVD players and recorders, home cinemas, video players and lighting equipment. Panasonic gives two examples of products free of BFRs – fluorescent ceiling lamps and a kitchen lamp. Despite putting these PVC-free and BFR-free products on the market, Panasonic has yet to commit to fully eliminating all PVC and BFRs in its full product portfolio.

The company scores poorly on e-waste and only slightly better on energy; Panasonic discloses greenhouse gas (GHG) emissions from its own operations that have external verification and commits to absolute reduction in emissions. It scores well on energy efficiency, with 99.2% of main models of TVs launched in

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2005 meeting Energy Star and 64% exceeding by 50%. 100% of PCs launched since 2007 meet the latest Energy Star standard and 30% exceed. Despite this excellent performance, Panasonic fails to score full marks on energy efficiency, because it does not provide data on external power supplies used in the mobile phones that it sells.

## Philips

Philips is now in 12<sup>th</sup> place, scoring 4.3, reduced from its overall score of 5.3 points because it keeps the penalty point incurred in v.8, due to regressive lobbying against the principle of Individual Producer Responsibility in a consultation on the revision of the EU WEEE Directive. Philips previously incurred a penalty point for its membership of the Electronic Manufacturers' Coalition for Responsible Recycling in the US. This coalition has now been dissolved. Philips also scores zero on most of the other e-waste criteria, but gains a point for reporting on the recycling rate of the e-waste it collects in Europe.

Philips scores well on both toxic chemical and energy issues. On chemicals, Philips has committed to eliminating all phthalates and antimony by December 31 2010. Beryllium and its compounds are already restricted and arsenic is to be phased out of TV glass and other display products from 2008.

Philips also increased its score on energy by supporting mandatory cuts in greenhouse gases by industrialised countries of at least 30%. It continues to score the highest marks of all the ranked brands on energy criteria, disclosing externally verified carbon dioxide equivalent emissions, committing to absolute cuts in its operational carbon footprint by 25% by 2012 (using a baseline year of 2007) and sourcing 10% of its electricity in 2007 from renewable sources. Although Philips scores well on energy efficiency, reporting that some 71% of all TV models put on the US market after 2005 met the Energy Star standard, these data are only for US models and not all their new models globally. 10% of Philips current battery charger models fulfil the Energy Star requirements. These models exceed the technical Energy Star requirements by 5-15%.

## Apple

Apple's score remains the same, at 4.1 points, but the company drops to 13<sup>th</sup> position, having made no improvements since the last version of the ranking. Apple scores well for putting products on the market whose key components are free of brominated flame retardants (BFRs) and PVC vinyl plastic. For example, all new models of iMac and the MacBook Air have bromine-free casings and printed circuit board laminates as well as PVC-free internal cables. Millions of iPods now have bromine-free enclosures and printed circuit board laminates. The MacBook Air also has mercury free LCD display with arsenic-free glass. MacBook Pros come with mercury-free LED backlit displays.

Apple scores poorly on most e-waste criteria, except for reporting a recycling rate in 2006 of 9.5% as a percentage of sales 7 years ago.

It does only slightly better on energy criteria, failing to score on all criteria except energy efficiency of products, where it scores top marks (doubled) for all desktops computers, portable PCs and displays complying with Energy Star 4.0 and their



iPod and iPhone power adapters not only exceeding the Energy Star standard, but already meeting California's stricter efficiency regulations that became effective 1 July 2008.

## **Lenovo**

Lenovo is in 14<sup>th</sup> position with a score of 4.1 points, gained mainly on the e-waste criteria. Lenovo now has a take-back programme in the US and reports a recycling rate of 2.16% of the weight of products shipped in 2007 and 7.74% of the weight of products shipped in 2000. However, much of that data is based on the amount of EU e-waste whose recycling was financed by Lenovo – by current market share – and may bear no relation to the amount of Lenovo branded e-waste actually recycled.

Lenovo scores well on most of the toxic chemical criteria. However, it has yet to put on the market products free of brominated flame retardants and PVC vinyl plastic and needs to commit to the phase out of beryllium (including alloys and compounds), antimony and its compounds and all phthalates.

Lenovo discloses greenhouse gas (GHG) emissions from global operations in 2007, although these are not externally verified. Lenovo also scores double points on energy efficiency, for having all global models of notebook, desktop and monitor introduced since the effective date of Energy Star 4 meeting the current Energy Star requirements, either in the basic models or as an option. Energy Star compliance is not supplied as standard for all models; for some models, customers can opt for non-Energy Star compliant PCs.

## **Motorola**

Motorola drops to 15<sup>th</sup> place, scoring 3.7 points, losing points because although its models of chargers are certified as Energy Star compliant in March 2007 – this is not since the latest energy efficiency standard for chargers (v.1.1) came into effect, which was in January 2005; it therefore scores no points on this criterion. In the U.S, all Motorola's mobile phone chargers exceed ENERGY STAR Tier 2 requirements by more than 50 percent in sleep and standby/no-load modes – but what about chargers sold outside the US? On the other energy criteria Motorola scores relatively well for disclosing greenhouse gas emissions, committing to cuts and reporting a 5.4% renewable energy use (as proportion of all electricity purchased) in 2007.

Motorola scores better on the chemicals and e-waste criteria. The company has launched 55 models of mobile phone with BFR free circuit boards. However, Motorola is the only mobile phone brand to still fail to commit to eliminating all BFRs and PVC with a timeline, in all of its products. On waste issues, Motorola provides a take-back and recycling service in 73 countries, representing over 90% of global mobile phone unit sales. It reports a global take-back rate of 3% of total handsets sold in 2005.

## **Sharp**

Sharp drops to 16<sup>th</sup> place with a score of 3.1, mainly because although it reports on many models of TVs that comply with the Energy Star requirements, the reporting period that this information refers to is not supplied.

Sharp scores well on its policy and practice on toxic chemical issues; it has launched many models of LCD TVs and solar modules that are free of PVC (except accessories) and has committed to eliminating phthalates from all products by the end of 2010.

On e-waste criteria, Sharp scores pitifully, only gaining points for information provided to consumers in a few countries on what to do with their discarded Sharp branded products and for the use of small amounts of recycled plastic.

Sharp discloses third party verified greenhouse gas (GHG) emissions from its own but needs to do more on the other energy criteria

## **Microsoft**

Microsoft is in 17<sup>th</sup> position with a miserable score of 2.2 points, mainly on toxic chemicals criteria. The company provides a timeline of the end of 2010 for eliminating phthalates.

On e-waste, Microsoft scores only on its weak support for Individual Producer Responsibility. On energy, the company only scores for reporting its total carbon dioxide equivalent emissions, from its own operations and although it now has a Climate Change Policy it makes no reference to specific reduction targets for greenhouse gases.

## **Nintendo**

Nintendo remains in last place with a pitiful 0.8 points out of 10, scoring zero on all e-waste criteria. The company has banned phthalates and is monitoring use of antimony and beryllium and although it is endeavouring to eliminate the use of PVC, it has not set a timeline for its phase out.

Nintendo discloses carbon dioxide (CO<sub>2</sub>) emissions from its own operations and commits to cutting CO<sub>2</sub> emissions and other greenhouse gases by 2% over each previous year. However, Nintendo admits that an increase in business led to a 6% rise in CO<sub>2</sub> emissions in 2006.

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## ตารางแสดงอันดับผู้ผลิตสินค้าอิเล็กทรอนิกส์สีเขียว จากคู่มือฉบับที่ 1-9

อันดับ	กันยายน 2552	มิถุนายน 2551	มีนาคม 2551	ธันวาคม 2550	กันยายน 2550	มิถุนายน 2550	มีนาคม 2550	ธันวาคม 2549	สิงหาคม 2549
1	Nokia ↑ 7	Sony Ericsson ↑ 5.1	Samsung ↑ 7.7	Sony Ericsson ↑ 7.7	Nokia ↔ 8	Nokia ↑	Lenovo ↑	Nokia ↔	Nokia 7
2	Samsung ↑ 5.7	Sony ↑ 5.1	Toshiba ↑ 7.7	Samsung ↑ 7.7	Sony Ericsson ↑ 7.7	Dell ↑	Nokia ↓	Dell ↔	Dell 7
3	FSC ↑ 5.5	Nokia ↔ 4.8	Nokia ↑ 7.3	Sony ↑ 7.3	Dell ↓ 7.3	Lenovo ↓	Sony Ericsson ↑	Fujitsu-Siemens ↑	HP 5.7
4	Sony Ericsson ↓ 5.3	Samsung ↓ 4.5	Sony ↓ 7.3	Dell ↓ 7.3	Lenovo ↑ 7.3	Sony Ericsson ↓	Dell ↓	Motorola ↑	Sony Ericsson 5.3
5	Sony ↑ 5.3	Dell ↔ 4.5	Dell ↓ 7.3	Lenovo ↓ 7.3	LGE ↑ 7	Samsung ↔	Samsung ↑	Sony Ericsson ↓	Samsung 5
6	LGE ↑ 4.9	Toshiba ↓ 4.3	Lenovo ↓ 7.3	Toshiba ↑ 7	Sony ↑ 7	Motorola ↔	Motorola ↓	HP ↓	Sony 4.7
7	Toshiba ↓ 4.7	Acer ↑ 4.3	Sony Ericsson ↓ 6.7	LGE ↓ 7	Fujitsu-Siemens ↑ 7	Toshiba ↑	Fujitsu-Siemens ↓	Acer ↑	LGE 4.3
8	Dell ↓ 4.7	Panasonic ↑ 4.3	LGE ↔ 7	FSC ↓ 7	Samsung ↓ 6.7	Fujitsu-Siemens ↓	HP ↓	Lenovo ↑	Panasonic 3.3
9	HP ↑ 4.7	Motorola ↑ 4.3	Apple ↑ 6.7	Nokia ↓ 6.7	Motorola ↓ 6.7	Acer ↔	Acer ↓	Sony ↓	Toshiba 3
10	Acer ↓ 4.5	HP ↑ 4.3	FSC ↓ 6.7	HP ↑ 6.7	Toshiba ↓ 6	Apple ↑	Toshiba ↑	Panasonic ↓	Fujitsu-Siemens 3
11	Panasonic ↓ 4.5	Apple ↓ 4.1	HP ↔ 6.7	Apple ↑ 6	Acer ↓ 5.7	HP ↓	Sony ↓	LGE ↓	Apple 2.7
12	Philips ↑ 4.3	Sharp ↑ 3.9	Motorola ↑ 6.3	Acer ↓ 5.7	Apple ↓ 5.3	Panasonic ↑	LGE ↓	Samsung ↓	Acer 2.3
13	Apple ↓ 4.1	Lenovo ↓ 3.9	Acer ↓ 5.7	Panasonic ↑ 5	HP ↓ 5.3	LGE ↓	Panasonic ↓	Toshiba ↓	Motorola 1.7
14	Lenovo ↓ 4.1	Philips ↑ 3.7	Sharp ↑ 5	Motorola ↓ 5	Panasonic ↓ 5	Sony ↓	Apple ↔	Apple ↓	Lenovo 1.3
15	Motorola ↓ 3.7	FSC ↓ 3.7	Panasonic ↓ 4.7	Sharp 4.7					
16	Sharp ↓ 3.1	LGE ↓ 3.3	Microsoft ↑ 4.7	Microsoft 3					

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17	<b>Microsoft</b> ↔ 2.2	Microsoft ↓ 2.15	Philips ↔ 4.3	Philips 2					
18	<b>Nintendo</b> ↔ 0.8	Nintendo ↔ 0.8	Nintendo ↔ 0.3	Nintendo 0					