

Does **SIZE** Matter? (in laptops!)

KinnerNet 2005

By Eli Marmor

Netmask (El-Mar) Internet Technologies Ltd.

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Size of Laptops: Two Schools

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- The American way (or “Mine is Bigger!”):
 - More inches, more pixels, more power, more features
 - Also called “Desktop Replacement”
 - Typical weight: 2.5Kg-4Kg
- The Japanese way (or “Small is Beautiful!”):
 - Monsters are for the desktop, not for road warriors
 - Also called “Ultralight”
 - Typical weight: 0.39Kg-1.2Kg

American (big) vs. Japanese (small):

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It's true for almost everything else too:

- Cars
- Houses
- Food
- Refrigerators
- Malls
- Body (height AND weight)

The *Big Conspiracy*TM:

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After becoming lighter and smaller, the laptops changed direction and compete for size. The American user demands (and gets!) larger and thicker laptops (14.1", 15.4", and the new hit: 17"!);

Is it the new trend, or the biggest (vendor's) conspiracy since the murder of JFK?

And what will the next battlefield be?

Price?!

("buy from me, mine costs twice!")

What is the Vendor's Motivation? Shouldn't They Meet the Market Needs?

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- **Heavy** laptops use **standard** components
- **Ultralight** laptops use **special** components
- An **ultralight** which is priced twice because of its extra value for the user, may **cost triple** to manufacture
- Result: The **margin** for a **\$3K ultralight** is usually **lower** than a **\$1K heavy** laptop!
- Practical conclusion: Sony/Panasonic/JVC/Sharp/etc. **DO NOT EXPORT** their ultralights!

What Else Stops Laptops from Being Lighter?

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- **Man Machine Interface:**
 - Screen
 - Keyboard
- **Power:**
 - Battery
 - AC Adaptor

Overcoming the MMI Barrier:

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- Virtual Keyboard (Laser)
- Special Glasses (instead of a screen) or OLED

Overcoming the Power Barrier:

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- Fuel Cell and Similar Technologies (Alcohol etc.)
- 1-Minute Recharge

The promise: to cut power/weight ratio by 10

Subtract the AC Adaptor Too

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- Example:
 - Net Weight = 1, Battery = 0.3, Adaptor = 0.3
- Take advantage of the better technology to make battery 90% smaller (the banal way):
 - $1 + 0.03 + 0.3 = 1.33$ (save 17%)
- Take advantage of the better technology to make battery 70% smaller and subtract the AC adaptor (the tricky way):
 - $1 + 0.1 + 0 = 1.1$ (save 31%)

Marmor's Index of Laptop's Value

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$$\frac{D * R * P}{V * W}$$

D = Disk (in GB)

R = RAM (in GB)

P = # of Pixels

V = Volume (in inch³)

W = Weight (in lb.)

CPU, battery, etc.: unmeasurable!

Of course, there are other features (DVD, etc.)

The Monsters: PowerBook G4 17"

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- Disk: 100GB
- RAM: 0.5GB
- Resolution: 1440 * 900
- Size: 15.4" * 10.2" * 1.0"
- Weight: 6.9 lb.
- Processor: 1.67GHz PowerPC G4
- Screen: 17.1"
- What else: DVDRW
- Marmor's Index: 59786

The Monsters: Gateway M675XL

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- Disk: 80GB
- RAM: 1GB
- Resolution: 1680 * 1050
- Size: 16.06" * 10.89" * 1.42"
- Weight: 7.7 lb.
- Processor: 3.4GHz Pentium 4
- Screen: 17.1"
- What else: DVDRW
- Marmor's Index: 73796

The Monsters: Toshiba Qosmio G15

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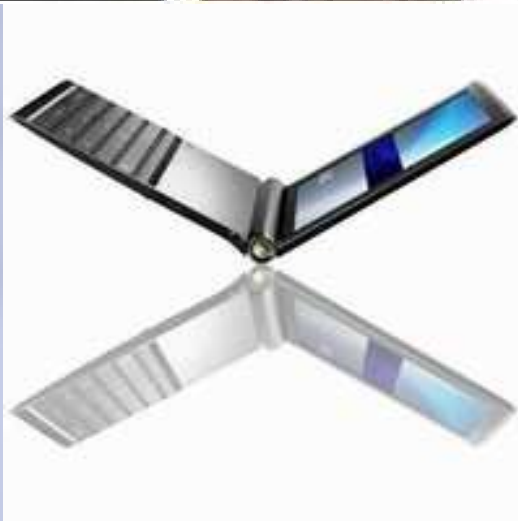


- Disk: 100GB
- RAM: 0.5GB
- Resolution: 1440 * 900
- Size: 15.98" * 11.22" * 1.71"
- Weight: 9.7 lb.
- Processor: 1.8GHz Pentium M
- Screen: 17.1"
- What else: DVDRW
- Marmor's Index: 21789

The Ultralights: Sony Vaio X505

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- Disk: 20GB
- RAM: 0.5GB
- Resolution: 1024 * 768
- Size: 10.2" * 8.2" * 0.38-0.8"
- Weight: 1.71 lb.
- Processor: 1.1GHz Pentium M
- Screen: 10.4"
- Marmor's Index: 93196

The Ultralights: Toshiba Portege R100 (mine!)

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- Disk: 40GB
- RAM: 0.5GB
- Resolution: 1024 * 768
- Size: 11.26" * 9.02" * 0.59-0.78"
- Weight: 2.4 lb.
- Processor: 1.1GHz Centrino
- Screen: 12.1"
- Marmor's Index: 94891

The Ultralights: OQO Model 01

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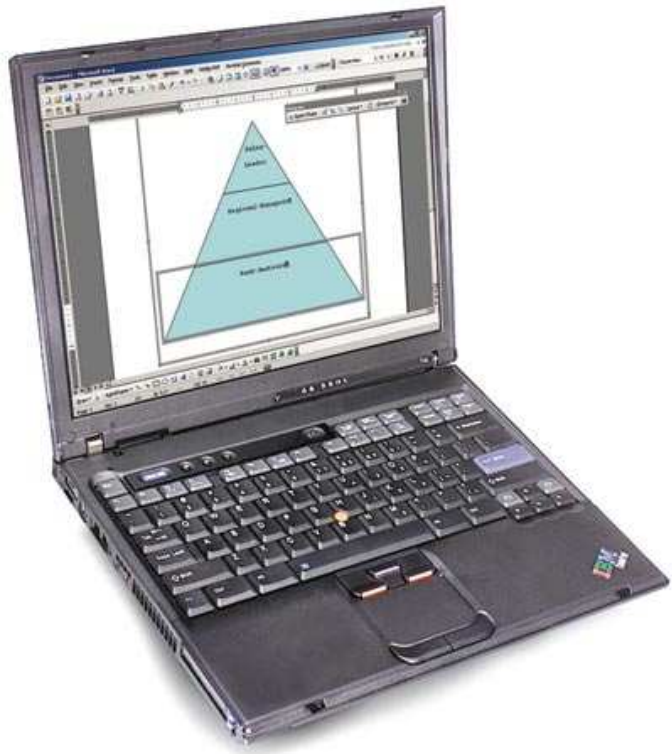


- Disk: 20GB
- RAM: 0.25GB
- Resolution: 800 * 480
- Size: 4.9" * 3.4" * 0.9"
- Weight: 0.86 lb.
- Processor: 1GHz Crusoe
- Screen: 5"
- Marmor's Index: 148896

Normal One: Thinkpad T42 15"

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- Disk: 40GB
- RAM: 0.5GB
- Resolution: 1024 * 768
- Size: 13.0" * 10.6" * 1.2"
- Weight: 5.70 lb.
- Processor: 1.8GHz Pentium M
- Screen: 15.0"
- Marmor's Index: 16687

Other Normals

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T42 was brought as an example because currently, among the “high-end” laptops, it is considered as the most popular one.

However, ignoring the few “high-ends”, most of the today’s popular laptops reach very low “indexes”, even under 1000, and I prefer not to name them.

Future PocketPC/Phones: HTC MDA IV

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- Disk: NA
- RAM: 0.125GB
- Resolution: 640 * 480
- Size: 5.2" * 3.2" * 0.85"
- Weight: 0.46 lb.
- Processor: XScale 520MHz
- Screen: 5.0"
- What else: UMTS(!), WiFi, BT, IR, 2 Cams, QWERTY, and... VOICE (!!!)
- Marmor's Index: NA (no disk)