



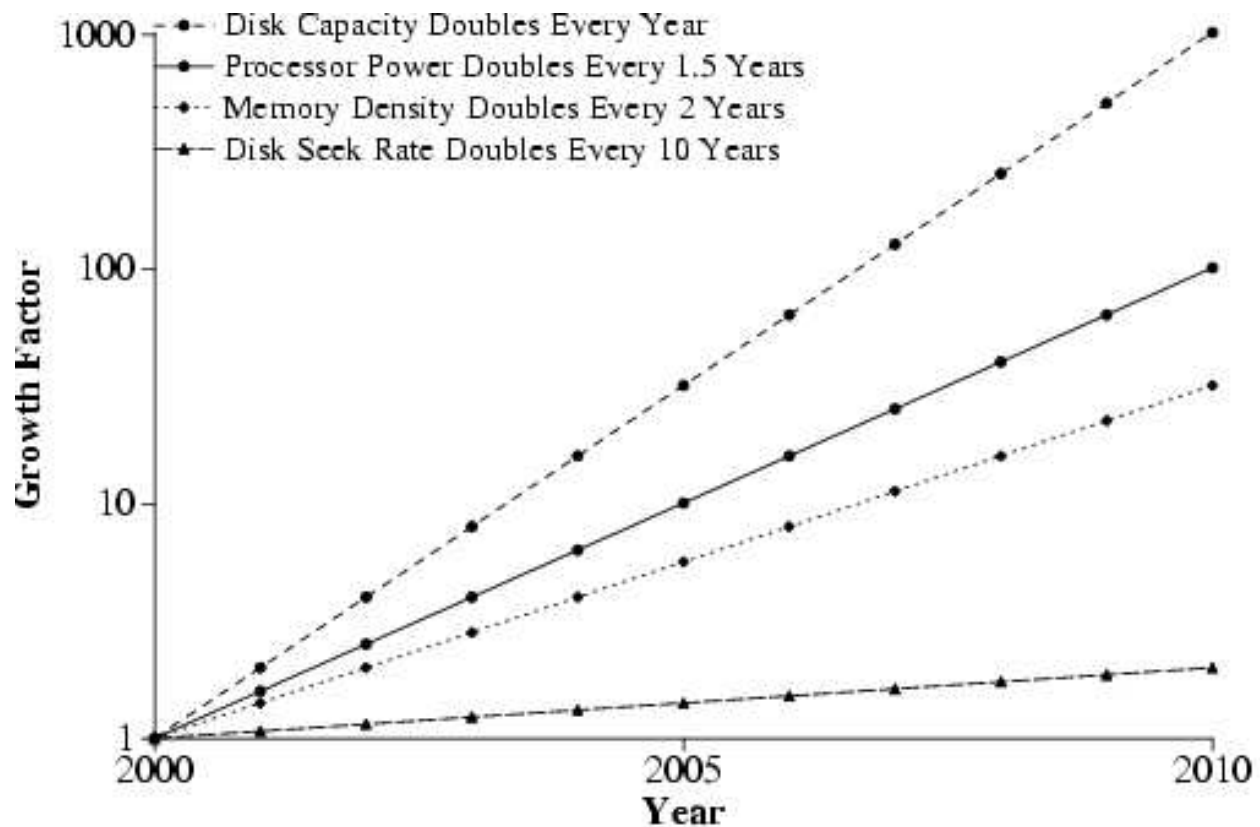
Performance



A simple web server

```
while (true) do {  
    wait for message  
    data = read(name)  
    send data  
}
```

I/O bottleneck



Hypothetical Effects of Dissimilar Doubling Rates Over a Decade



A simple web server

```
while (true) do {  
    wait for message  
    data = lookup(name)  
    if (data not present) {  
        data = read(name)  
    }  
    send data  
}
```



Multi-threaded server

Run many threads, each with code

```
while (true) do {  
    wait for message  
    data = lookup(name)  
    if (date not present) {  
        data = read(name)  
    }  
    send data  
}
```