

Posted AT 7:47 AM EST ON 17/01/07

A file cabinet on a keychain

Able to store oodles of data, tiny drives are a precursor to truly portable computing

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SPECIAL TO THE GLOBE AND MAIL

Douglas Smith and his three estimators regularly thank good fortune for the day, three years ago, when they first tried a thumb-sized marvel of technology -- the USB flash drive. Today you won't find any of them without three or four of the devices in their pockets.

The reason? The now ubiquitous thumb drives, also called memory keys, have relieved Mr. Smith and his co-workers of the burden of data storage, data transfer and especially the hassles involved in handling paper -- in this instance wallpaper-like rolls of blueprints.

In those dark, pre-USB drive days, the estimators would visit architects and clients to pick up blueprints for work that Smith Brothers Contracting Corp. wanted to bid on. For three generations, the Ancaster, Ont.-based company has specialized in installing drywall in industrial, commercial and institutional projects. Using blueprints to estimate job costs is essential to successful contracting. But the size of the blueprint packages -- often 40 or 50 pages, as big as 60 centimetres high and a metre wide -- was daunting.

The estimators would have to copy the blueprints, lug them back to the office and make even more copies. The blueprints would have to be catalogued and stored well beyond the completion of the work.

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Doug Smith of Smith brothers' contracting Corp. in Ancaster Ontario, now uploads blueprints with his USB key rather than print copies and lug them back to the office. (*GLENN LOWSON/GLOBE AND MAIL*)

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"It was a real pain," Douglas Smith says. "You had to do it all by hand because the files are just too big to e-mail."

Today, however, handling blueprints is a snap. The estimators still go the client's or architect's office to see the documents, but then they plug a flash drive into a Universal Serial Bus port on a computer and download the blueprints in a matter of seconds. Then, back at their office, they repeat the process -- uploading the drawings to their own computers, where estimating software helps them work out costs.

Those flash drives not only transport the large blueprint files but serve as backup storage as well.

"I have one in my pocket right now," Mr. Smith said in an interview. "It is a 2-gigabyte drive that cost \$120, and it holds four or five complete sets of blueprints. Those darn things are amazing."

Amazing indeed, said Barry Dowd, president of Integrated Business Intelligence Corp. of Hamilton, which specializes in solving small-business IT challenges. He can't do without them.

"I carry presentations on them," he said. "If anything happens to my laptop I can always pull out the USB drive, plug it into a client's computer and go right ahead as if nothing has happened."

Rick Atkinson, director of merchandising at Staples/Business Depot Ltd. of Richmond Hill, Ont., which has 270 Staples Business Depot stores across Canada, said USB flash drives are de rigueur among his suppliers.

"They come in and hand you a USB flash drive and say keep it," he said. "Everything is on it -- product information, price lists, everything. It greatly speeds the pace of doing business and saves enormous space and costs in storage."

Thumbnail USB flash drives are only about four years old, but they have seized the imagination of those who are the least bit computer savvy, said Eddie Chan, a research analyst at IDC Canada.

"It is their enormous storage capacity -- up to 4 gigs right now -- combined with affordable prices and portability," he said. A 64-megabyte drive can be purchased for as little as \$7.99. "There are even some top-end models that offer limited applications such as e-mail and file management."

Granted, there are still downsides, Mr. Chan added. Most of the drives have a limited reusable life; data can be written over perhaps only five times. They have a slow data-transfer rate and as a result cannot handle sophisticated programs. They also can pose a security threat to corporate systems.

"What I think they represent, though, is a major step toward easily portable computing," he said. "New generations of USB drives will be able to replicate your home or office computer on any other computer with a compatible drive."

While no organization tracks USB flash drives, Tech Data Canada Corp., the domestic arm of the global IT products distributor, offers some insight. Ray Gonsalves, director of product marketing, said his company's sales of USB drives rose by 15 per cent in 2006 and 56 per cent in 2005. At the same time, prices dropped by 20 per cent in 2006 and 31 per cent in 2005.

They are still in the early stages of development, said Mr. Gonsalves, who agrees with Mr. Chan that they may hold the key to computing portability in the future.

What USB drives have going for them is tremendous storage capability. The downside is that today's USB ports in computers cannot handle the data-transfer speeds that flash drives are capable of.

"USB ports are just in version 2.0 now," Mr. Gonsalves noted. The trick is not to create a small USB drive holding all standard office applications, which he said can be done; instead, the trick is to come up with a better USB port that can handle the speeds at which data needs to be transferred from portable drive to computer.

"We can easily see that coming," said Mark McCallum, division manager of Best Buy for Business at Best Buy Canada Inc., based in Mississauga, Ont.

"Right now top-end U3 USB flash drives have a number of basic applications on them like e-mail so you can take a drive to an Internet café and send e-mails and do basic work," he said.

"It does not take much imagination to see the natural extension of this trend," he added.

The USB drive is just one route toward truly portable computing, however.

Route1 Inc. is betting on its MobiKEY, a form of flash drive aimed at corporate network users that allows anyone on a network protected by Route1 to access any other computer on the network, using a flash memory card similar to the SIM cards used in cell phones.

MobiKEY has the added advantage of complete security protection, said Jerry Iwanski, Route1's chief technical officer. "What it does is offer secure access to your home computer from your office computer and vice versa," he said.

Secure is the key word. USB drives are so small they can be carried into secure facilities undetected and used to pirate corporate data or to introduce viruses or other forms of malware.

"That is a problem some software companies like Microsoft are addressing now," Mr. Dowd said. "New Vista versions offer protection for USB ports. I have even heard anecdotally of corporations using silicone to seal up USB ports."

None of this, however, detracts from the pleasure Mr. Smith and his estimators derive from their USB flash drives.

"My only worry is that they are so small I might lose one," he said. "Happily that has yet to happen."

USB flash drive

What it is: A memory storage device shaped like half a popsicle stick

and named for the Universal Serial Bus port it plugs into. Commonly known as a thumb drive or memory key.

How it works: Computers create

data as electrons; the flash drive stores those electrons and

allows other computers to retrieve them.

Capacity: Up to 4 gigabytes, with the most popular versions available in 256 MB, 512 MB, 1 GB, 2 GB and 4 GB.

Cost: \$7.99 to \$199

Versatility: While most drives store data, new U3 multi-gigabyte versions also contain applications that allow for e-mailing, file creation and file management.

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