In for a penny: micropayments on the Internet

Why micropayments?

A graph of payment amounts made for Internet transactions would show a large number at the 'free' end, representing accesses of the tremendous amount of material funded by advertising, government sponsorship, and just plain altruism. There would be a smaller, extended hump starting at about the $US5 mark and trailing off gradually up in the thousands; included here would be some of the paid reports supplied by Internet research services like Forrester and Gartner. But between zero and, $US5 there would be very little activity. This is the area of *micropayments*; the region in which the current cost of carrying out a transaction through established methods is greater than the amount of the transaction itself.

This is the area in which users might purchase a short online newspaper or magazine, download and read a single article, buy a music track or an out-of-copyright e-book. Advocates of micropayments claim that much of the Internet piracy of music and other material could be avoided by making it available at a reasonable price; they also claim that individual authors, artists, cartoonists, programmers and musicians could make a fair living from micropayments without having to attract the attention of large distributors.

The idea has been around for a long time. Five years ago Dwight Walker wrote about a then-new micropayments system called MilliCent (*Online Currents*, 13(7), September 1998): this worked by selling 'scrip' through 'brokers' to customers who could then redeem the scrip for digital products with 'vendors'. MilliCent is no more; but some of its philosophy seems to have found its way into PayPal, which I discuss in detail below, along with a more recent contender, BitPass.

Micropayments systems are based around the activity of a broker organisation. In the case of PayPal, the company (which is a subsidiary of eBay) simply handles financial transactions. BitPass, by contrast, also acts as a storefront, linking users to the material which it sells.

PayPal

PayPal (**http://www.paypal.com**) was founded in 1998 and acquired by eBay in 2002, giving it an enormous advantage over its competitors through its direct links to the eBay auction system (see 'Buying and Selling on eBay', *Online Currents*, 18(10), December 2003). It is not strictly a micropayments system, but handles transactions of all sizes, many of which would be in the 'minipayments' range from about $US5 to $US10. Paypal operates through credit cards and bank accounts; registration requires the user to submit these financial details, and settlement for an item purchased takes place ultimately through the user's credit card account. There are no fees for purchasers using PayPal; costs are borne by vendors, who pay a fee of $US0.30 plus 2.2% of the transaction amount for transactions within the USA. US users can reduce (or cross-subsidise) their payments by getting an PayPal ATM debit card.

Fees for users outside the US are somewhat larger and there is also a 1% charge added for cross-border transactions. This means that selling items for less than about 40 cents US will actually cost the vendor money, though there may be trade-offs from acquiring new customers and spreading publicity. There are also, of course, credit card and bank account fees to consider. The smallest purchase I have made through PayPal was a BlackMask eBook for $US0.99, discounted to $US0.75, which clearly didn't make much profit for the vendor.

To send money from a PayPal account requires the entry of your own PayPal username and password and the email address of the vendor. A vendor can send an 'invoice' in the form of a

request for payment, but no money changes hands without the purchaser's explicit agreement. At the moment PayPal transactions can be made in five currencies: $US, $Canadian, pounds sterling, Euros and Yen. Australians using PayPal will have to convert their amounts into $US with a currency converter like **http://XE.com**.

PayPal is a large and well-documented site with a 'Security Center' which describes their (optional) buyer insurance and a formal complaints process for transactions which do not end happily – although here, too, US and Canadian users do better than their overseas counterparts. In fact PayPal is large enough to attract its own critical site, PayPal Sucks (**http://www.paypalsucks.com**). For the reasons discussed above, though, it doesn't provide a solution for the 'low end' of micropayment transactions: and this is where there is a niche for companies like BitPass to survive.

Insert Figure 1: The BitPass Home Page

BitPass

BitPass (**http://www.bitpass.com**) works with a prepaid virtual 'subscription card' which you can buy through a credit card (or PayPal). These have a minimum value of $US3 and go up to $US60. Using an existing PayPal account I was able to purchase a $5 card and sign up for a Spender account in about one minute (cards can also be sent to other people as gifts). I was then able to view the items for sale via the BitPass site. The system appears to use cookies to record visitors' details and preferences.

There are about fifty types of digital merchandise on offer, and the number appears to be slowly growing. The flagship vendor is the Web cartoonist, and author of *Understanding Comics*, Scott McCloud, who not only acts as an advisor and offers his comics for sale here but has written a defence of BitPass against the attacks of Web cynic Clay Shirky. Shirky's original article is at http://shirky.com/writings/fame_vs_fortune.html, McCloud's response at http://www.scottmccloud.com/home/essays/2003-09-micros/micros.html.

I was able to buy an instalment of McCloud's new 'comic novella' for 25 cents US. It also required a Flash plug-in, however, and a download time of several minutes during which I was looking at a blank screen waiting for something to happen. Eventually I gave up and decided to return later when I had more time. Purchasers can visit the comic online up to 32 times, or alternatively download the file on to their own PCs. There does not appear to be any kind of copy protection on the material, although only a fixed (but generous) number of downloads is permitted on each purchase. BitPass operates by inserting their own 'invoice' after the user clicks on the item to purchase; this comes up with the amount to be deducted and a request for confirmation.

I tried some music from the site *The Sonic Styling of CurvedSpace*, in MP3 format, at 25 cents US per track. This site was more responsive, though again the download times were prolonged on a dial-up system – about 15 minutes for a 4 Mb file. The music, when it finally arrived, was very pleasant; but there is also lots of pleasant music available free through sites like Epitonic (**http://www.epitonic.com**).

Prose is available in the shape of 'digital dime novels' for ten cents each, but here I encountered my first BitPass error in the form of a 'voucher expired' message. The BitPass site also links to the popular *Ten Quick Steps* paperback series, but at $US10 each these are not really micropayment material. Much of the other prose material would fall into the 'vanity publishing' category, competing with similar material available free over the Web.

Software included a game called CopyCat and fonts and a filter plug-in for Adobe Photoshop.

A BitPass indicator next to the item changes from yellow to green when an item has been purchased, preventing the possibility of paying for the same thing twice or more. None of the

items showed a file size, making it impossible to know how long they would take to download. In general the music files seemed the best value, especially for an ambient fan like me.

Vendors wishing to use BitPass pay a transaction fee of 15% for lower-priced items, and $US0.50 + 5% for higher-priced items. Setting up as a BitPass vendor requires the installation of gateway software on your Web server to redirect customers through a BitPass confirmation page. This software performs a gatekeeper function, allowing only users with accounts in credit to access the download links.

iTunes – Paid music downloads

BitPass has only been operating for a few months, but it may have already missed the bus. The most popular online transaction system in history appeared in the US in April 2003 and earned an estimated $US100,000 in its first eighteen hours of operation. This is the Apple iTunes music download system, currently available only in the US, which provides users with music tracks for downloading at 99 US cents per item. Some full albums are obtainable for $US9.99. Downloaded tracks can then be burnt on to a CD or moved to an Apple iPod player, a small portable MP3 player with a large hard disk which can hold up to 10,000 tracks. iTunes files cannot be copied in their original format. Users can select tracks by performer, by album or by genre.

Payment is made through a credit card. Apple and some of its competitors have announced that similar services will be available in Australia by early 2004; users will need to have a Macintosh or an IBM-compatible running Windows 2000 or XP.

Clay Shirky's main argument against micropayments is that they take more of the user's time to plan and carry out than the value of the item is worth. One solution is to present a tightly focused package of categorised material from a trustworthy distributor. This increases the chance that a user will purchase several items at once. Apple iTunes and its competitors would seem to fit this model perfectly.

At the moment the iTunes service is confined to music and spoken word files, but if the current level of success continues there will be pressure for other media – eBooks, images, software and videos – to be distributed in the same way. And as long as other companies are jumping on the iTunes bandwagon, putting downward pressure on prices, there will be a strong incentive for Apple to broaden its horizons. Apple have confirmed that their financial incentive for setting up iTunes is mostly for the sale of iPods (which retail in Australia for $500 upwards), not music. Perhaps we will see other portable devices which are locked to particular file formats in this way, and a similar mass distribution of files to feed them.

It may be that it takes a big company to make a success of small payments. Next stop, the Apple iViewer?