



Dope Wars and PDAs: The Technophile Drug Dealers Have Finally Found Their Platform

-An STS/HCI/Business review-

By Honor Gunday for STS145

Introduction

Dope Wars is one of the most simple, yet addictive games in the history of computer simulation games. Dope Wars has especially become more popular in the past 3 years with the proliferation of the PDAs (*Personal Digital Assistant*) after it had been re-programmed by Matthew Lee, to fit the Palm OS platform. The game leaves its marks on the Game History timeline, not only because it is one of the first Palm OS games ever developed but also because of many other interesting effects it has had in the society, work place, the PDA market and people's lives. The game's controversial theme and its paradoxical business audience also create a large amount of controversy from various high establishments. Nevertheless, Dope Wars keep proliferating and spreading like an addictive game epidemic from user to user via email or by downloads from CNET increasing on a daily basis. Let's observe why and how it has been able to take on its audience so easily and so deeply...

The Game Play

The goal of the game is to get rich quick, by buying and selling drugs in different suburbs of New York City within a month's time. You, the drug-dealer in this simulation, start out with a debt to the Loan Shark and some cash that you can use to begin your drug-dealing career. You buy and sell different kinds of drugs in various suburbs of New York City and try to pay back your debt to the Loan Shark without getting caught to Officer Hardass, a NYPD cop who is after you with his men and dogs. You don't want to delay the payment of the loan too much if you don't want to have your legs broken by the Loan Shark's hit men. If you're lucky, you can become a millionaire and retire in a villa in the Bahamas, or dead on a sidewalk.

You can buy and sell drugs on various markets of New York City and increase your cash to pay off the loan. After you've paid off the loan, you can start making money. If you get mugged or if you get caught by the cops, you lose some of your money and drugs. So it's smart to put some of the cash into a bank account. Throughout the game, you will randomly be offered to purchase various items such as a trench-coat with more stash-capacity, a gun to protect yourself against the cops or the hit-men, to help you in your drug-dealing endeavor. Sometimes, you can also get lucky and find some drugs on an overdosed bum. Prices of drugs fluctuate randomly depending on the availability and demand in the different suburbs: when there is a drug-bust, the prices go up and when there is a large quantity available in the market (i.e. Colombians sneak in large amounts of Cocaine), the prices drop.

Many people have been addicted to this game and many people have taken the endeavor of developing new versions of Dope Wars in the 18 year history of the game...

DopeWars Timeline, People, Companies

Dope Wars is not an addictive game just for the players but with over 15 different versions under the "Dope Wars" name and many different clones, it is a gaming phenomenon. Dope Wars has charmed many people around the world and especially programmers who constantly contribute to Dope Wars legacy by launching new improved, translated, cross-platform versions. Today, Dope Wars is available as a single user, as well as a networked multi-user version on Windows, Unix, Linux, MacOs, Win CE, PalmOS operating systems, along with IRC-based versions.

The initial game was John E. Dell's 1984 MS-DOS version of "Drug Wars". It was the basis for an entire genre of BBS games developed after that. People were somehow sharing their scores and competing with each other using BBS systems and spreading the software to new users and addicting fresh players to this wonderful drug dealing simulation on the computer. Drug Wars suffered greatly from the usability problems associated with the command-line interface, and Happy Hacker Foundation recoded the program based on the original and made improvements to the interface by adding an easier navigation and expanding the drug options available.

The game was forgotten for a while as the Web gained more mainstream popularity and the BBSs became obsolete because of FTP and Web-based bulletin boards and communities.

In 1998-1999, is the revival period of Drug Wars with a new name "Dope Wars".

Ian Wall, received an email containing the old game called Drug Wars on 08/07/1998. He continues his story... "I was instantly hooked on it, as were the rest of my colleagues in the office. It wasn't long before I decided to update it and undertook the task of rewriting it from the ground up, throwing in a few extra features along the way. The website sprang up from mine and my colleagues desire to compare scores in one central place, rather than walking around the office peeking at each others monitors!" says Ian Wall. This website that stored everyone's high scores later became Beermat Software, out of England. The new Dope Wars for the Windows platform by Beermat Software was more entertaining and made use of multimedia. Beermat also developed cartoon-like characters and voices, sounds for the different loan shark personalities, cops and events. This version was downloaded by 4 million users by 2002. This version made the top five on Download.com's most downloaded games list and has been featured in many magazines.



Dope Wars Cartoon Characters from the Beermat Software version.

Ben Webb, a Computational Chemistry Phd student at Oxford University, also got interested in Drug Wars. A friend of his showed him the old MS-DOS version of Drug Wars, back in 1998. At the time, he had just started to program on Unix systems and wanted to learn about networks so he found it to be a good excuse

to build a new, networked version of Dope Wars. He adds that his friends liked and encouraged the idea.



Ben Webb, Programmer of the Source Forge Networked Dope Wars

He explained:

“I hacked up a quick single-player version a couple of days afterwards, and after playing with networking code for a few weeks, I released the first closed-source and multi-player version, 1.2.0, on 13th Feb 1999, but only within Oxford. The first open-source release to the world was version 1.4.0 on 27th April 1999.”

Ben’s version took the open-source path, and became a SourceForge project, making the code available to anyone who wanted to improve or contribute to Dope Wars. This project became more fruitful in contributing to the Dope Wars community with a cross-platform, networked game. Now, people who have Windows, Unix, Linux, Mac operating systems can all run their own versions of the Dope Wars client and connect to a main server and play a networked game.



Matthew Lee with his Volvo circa 2001

Later in 1999, Matthew Lee, a master's student at the MIT Media Lab, decided to program a handheld version of Drug Wars in a way similar to Ian Wall and Ben Webb. At the time, handheld computers were also increasing in popularity and becoming more mainstream especially in the business market because of booming dot.coms and technophile yuppies. Only few games were available until that time on the Palm OS platform so as soon as Palm Dope Wars was released, it grew in popularity among the Business people, not only because there weren't games around but also because the controversial drug theme was interesting and at the same time, the game was a financial simulation similar to trading stocks. The game got beamed and downloaded from the Internet and saturated the small number of handheld devices all over the world. The epidemic spread from users in Brazil to Germany, Japan to USA. Cnet's download site alone has a record of half a million copies of the game having been downloaded since Dope Wars' listing in 2000, and it's estimated that about 2 million copies of the game have been downloaded from various other websites. Considering that there are about 7-8 million Palm OS handhelds out there, it's about at least 1/4 of the market that has become a part time drug dealer.



Matt Lee is a gamer himself, you can see his Xbox and Playstation as well as his games on the living room floor of his apartment.

The fact that the game is available for free, had a positive impact on the success of the game. Matt Lee said "I believe the Palm community could use more quality free programs and less poor-quality shareware programs." He was successful at conquering the palm community's hearts by providing them a quality, free game.

The open-source movement has also played an impact on the distribution and widespread use of the game. Matt Lee and Ben Webb both used Dope Wars as a means to learn PalmOS and Unix Network programming respectively. They also made the code available to the audience that was full of techies who wanted

more features, different themes, various languages. Matt Lee said "I learned PalmOS programming from studying other programmers' code, and I hope new programmers might learn something from my code as well."

Dope Wars is an interesting phenomenon, not only it is a game, but it is simple enough for programmers to program it, that it often becomes people's first projects for learning to program in a language. Matt Lee and Ben Webb not only made the game popular but also made game programming popular through this game. This extra-quality is neither the goal or the consequence of any game in the market.

The release of the source of the game, in turn, strengthened the position of Dope Wars as a trendsetter. Many programmers hacked the source code and added and hacking bits and pieces of the code. Some new games in the "financial simulation" category have also off-sprung... Solar Wars which is a space-themed game by David Webb is based on the same open source code released as part of Dope Wars, just the theme is solar trading instead of drug dealing. There are also many different versions of Dope Wars available for Windows, Linux, and various PDAs thanks to the popularity of the game.

One of the offspring for Windows CE, is by Jennifer Glover, a female student from Maryland. According to her website, she likes reenactments, and she also has several programs for the Windows and Windows CE platforms. Dope Wars must be the product of these hobbies. The game as we can see has not only remained a "guy" game but also appealed to a female audience.



Jennifer Glover in her reenactment clothes on University of Maryland-Collegepark Campus.

With the emerging PDA/cell phone hybrids and the expansion of 3G networks, it is expected that networked gaming will soar. Dope Wars, ever since it was first implemented, has been a game very suitable for networked gaming. Multiple people can play the role of a drug dealer, drug users, cops and loan sharks and affect each other's money and value positions and the market conditions at the same time.

A CNET user comments on the game and the features he wants to see developed :“I'm a prosecutor by profession, and this game gives you something of a glimpse into how the other half lives. This game has some interesting features like fluctuations in market price and cops that steal half your money and all of your stash. I'd like to see future versions of this game include such elements as turf wars with rival dealers, the opportunity to bribe cops, arrest and bail, going to court and winning on a technicality, etc. As it is currently configured, Dope Wars is a very intriguing game with future potential limited only by the imagination of its developer.”

The Interface

Dope Wars is a very simple game, but many simple games, even including many Dope Wars suffer from usability problems that affect playability. Among the different versions of Dope Wars, we can see two emerging trends. One is the classical John E. Dell type which has a command line or semi-command line interface, and the other is the Matthew Lee version which supports direct-manipulation using touch screens. The Palm version is greatly superior to the classical version in a contextual and interactive sense. The Palm version greatly enhances user experience and rapidly creates an addiction for the game with its user-centric learning curve, and good application of Human Computer Interaction rules set forth by HCI experts such as Jacob Nielsen.¹ In this way, it can be said that Dope Wars and the handheld are a really good match for each other.

The original MS-DOS version of Drug Wars by Dell, which uses the then-available command line approach lacks in usability by today's standards. Dell's version pacifies the user by constantly dominating them with streamlined questions. It asks questions like “Where do you want to go? Brooklyn, Ghetto etc...” and the user needs to respond by the letter corresponding to the option to control the game. This gets very tiring after a while especially for gamers who mastered Drug Wars.

Beermat version of Dope Wars got rid of the command line interface and implemented the mouse and keyboard driven, direct manipulation. The mouse

¹ Useit.com, Usability Guidelines by Jacob Nielsen.

allows the user to navigate through the options available, while the keyboard allows numeric entries for money, quantity etc... In this way, the user is psychologically set free to "roam" about the interface, thus the game is able to convey a better sense of drug-dealing. Also, the sound effects, the images of the characters and the voices make the game more interesting. The drug dealing map also is broader with world capitals as the main drug dealing locations. So, you can fly around the world dealing and smuggling drugs. This might be to accommodate the international audience the game currently has extending from Korea to Brazil...

The Sourceforge'd & networked version by Ben Webb relies on the same basic navigation as the original Drug Wars by Dell and in that way does not benefit from the current technology, but with server and client software that it makes available for various platforms, it has proved to be simple, yet sophisticated in that way as well as the networking capabilities it offers. The networking capability enhances game play and addiction by introducing real time competition into the game whereas no other version affords this yet. Beermat is in the process of building a networked version based on the GameSpy Arcade SDK.

Among all these, Matt Lee's PalmOS version of Dope Wars stands out with its increased usability through the direct manipulation and touch screen of the handheld devices. When you play Matt's version –or also any other palm version- you feel that the game was meant to be for handheld devices. The fact that you can roam around with your handheld while you're playing the game, gives you the feeling of being immersed into the simulation. And that is exactly what a simulation is supposed to do, but Dope Wars is just a really addictive simulation on top of that, and the interaction style has a lot to do with it, just like how the interaction style and gameplay are so much greater with the special wheel joysticks for car/driving simulation games.

Matt Lee's Dope Wars affords good information of state (i.e. location, current holdings etc...) The Main Screen doubles as a map which lists the suburbs available (Bronx, Ghetto, Central Park, Manhattan, Coney Island & Brooklyn) and tells you your current location. You can click on any of the locations and "zapped" there, to the Dealing Screen. The dealing screen, again, tells you where you are, your available cash, debt and savings, gun and coat capacity along with the number of days you have left. It's easy to see where you are as you play the game and access the information you need. Help is also available at any time by pressing *h* on the top right corner of the screen, which helps novice users.

Matt's version is clearly a great improvement over the command-line or the mouse & keyboard versions. It doesn't duplicate information by making the information more interactive.

On top of this, Matt's Dope Wars is very adaptable to different level of users, from novice to advanced. Usually novice players need information to learn the game, and the advanced people need less and less of it. Matt's version smoothly transitions from a training wheels approach to an advanced gameplay as soon as the user stops making mistakes. The error messages and the popup information boxes help the user to understand what options are available to them when they make a mistake, whereas in the other versions, the error messages are delivered in the command line form, and the user is only allowed to enter one kind of information. If it asks A, B, C, it accepts those letters or gives you an error message, while in Matt's version, it tells you what the logical problem was.

To give an example of how Matt's version achieves the greater feedback: if you try to sell a drug that you don't have, it pops a message saying "You do not have any of that drug to sell". If you don't have enough money to buy a particular drug, it says "You cannot afford any of that drug." The information provided in the boxes, act as user-feedback and improve the interaction.

The smooth transitioning from a novice user to an advanced user, by getting used to doing things the Dope Wars way, creates an addiction for the player. The user learns first about how to deal drugs with the interface by following directions. Later, as the user gets used to the game, the error messages disappear and the emphasis starts to fall not on how well the person can navigate and transact in the game, but rather on how well he can deal drugs, and make a profit.

The Dell version on the other hand, always keeps control of the user by allowing options available to the user at the time. The user is free to take whichever action he wants to take, but the person is put into a passive mode because of the way the game interacts with the user. For example in old command line based adventure games, the user is allowed to enter whatever he pleases but only few things will be useful. In this game, you are restricted to typing A, B, C and that's it, you feel controlled instead of getting the satisfaction from having control.

Another good principle for usability is reversibility of a person's mistakes. This is important especially when you're learning how to play the game, because the player stops exploring and trying new things when it is so easy to make a mistake and ruin the game and later because there is no exploration, the person gets bored and leaves the game. The command-line interface doesn't allow the person to easily repurchase the things he bought or sold by mistake because of the continuous stream of commands and answers. Once you make a decision it affects your game and are helpless as a user. In Matt's version however, you can easily repurchase the things you sold my mistake and sell the things you bought

by mistake, giving the person the peace of mind to further concentrate on the strategy.

It's interesting to see the usability improvements in such a simple game, and the advantages of having direct manipulation provided by the new touchscreen PDA devices. They make the game play more interesting because the user dominates the game console just like with Game Boy. Instead of being immersed into the game environment, you immerse the game into your environment and strategize to beat the game that has become part of your life. Dope Wars, in its handheld versions, is more addictive than the other versions because of all these usability factors that Matt Lee has been able to address. Considering that he was a student at the MIT Media Lab, he certainly took advantage of his HCI background in this name in providing PalmOS people with a quality gameplay.

The Palm version as we can see creates a "better" addiction than the other versions and is likely to continue proliferating as the PDA market grows.

The Business Audience and Palm Gaming Business:

One would have never imagined that these handheld computers would ever replace the cell phones or even threaten the Game Boy market, which with over 80 million units sold, is still the leader in handheld gaming. Thinking that with the new development of GPRS and UMTS networks which allow constant connectivity, we can foresee that cell phones will require additional space to display all the information that will be available through the high speed network. This will most likely make the hybrid PDA/phone a standard and also allow growth for the handheld gaming market.

Matt Lee's Dope Wars is an interesting game that highlighted this phenomenon. It became popular when Palms were mostly used by the technophile business audience, which capitalized on the need for distraction and a reason for procrastination. The Drug dealing theme was controversial enough to make it interesting for people to talk about, especially for people wearing suits and talking about business, it gave the opportunity to let them "simulate" being a drug dealer, while still benefiting from the economics knowledge they had. Dope Wars is basically no different from trading stocks, you buy low, you sell high.

One business person on Cnet's reviews says : "I love the game and have been playing it for nearly a year now. Co-workers ask why I'm so tired and I tell them I was up all night selling drugs. What a hoot. Now they all know the secret. I get phone calls at 2 in the morning telling me they think I cheated with my high score of over \$120 MILLION."

Another reviewer said : "I've got the standard games on my palm I play, and then I've got DopeWars. Entertainment to the MAX. I love it best when people ask me what I'm doing, and I tell them that "I'm selling WEED in the Bronx at a great price thanks to the Coast Guard making a big bust last week, but the man is after me". I figured I would get board with the game but you get ADDICTED (pardon the pun)! I'm always trying to break my highest score. Over \$15 million in one month. The down side is you are always wishing that the game was for real. I'm in the wrong occupation!"

These reviews are really heart-felt and realistic. The game really captures the audience and gets them addicted to the game and gives them a way to distract themselves.

Another interesting this is that, PDAs allow a certain kind of privacy and because of their high propagation in the business world, PDAs are usually associated with "business", not games. This game is a really nice way to abuse the preconception, because although it has the look and feel of doing some intense business to an outsider, for an insider, playing Dope Wars on company time is as ethically wrong as dealing drugs. The business people can easily associate themselves with this virtual character, that of a drug dealer and at the same time feel as "illegal" because of they're guilty of playing a game on company time. This feeling Dope Wars provides to the business people most possibly contributed to the success of the game.

This game, along with many other Palm games, led the gaming industry to shift gears to produce games for the high income, X generation business people. Hudson Inc. for example has decided to launch games that are targeted for the Palm OS handhelds.

IDEO, produced the Game Face, after couple of business trips across the country between clients offices and theirs in Palo Alto. They saw that a great majority of million-mile-commuters had Palm pilots, and didn't put them down the whole flight heavily interacting with the device. When they paid attention, they saw that a great number of people had been addicted to games such as Dope Wars. By playing these game themselves, they realized why some games like Arkanoid which were popular on other platforms were not becoming popular on the Palm platform. They saw that it was because Palm's hard buttons were not efficient for controlling such games. So they built the Game Face. Game Face converted the Visor buttons into firing buttons and a joy stick which allowed people to play games on Visors just like a Game Boy.



Ideo's Game Face designed to turn a Visor into a Game Boy.

In the future, it is expected to see more games in the Palm market because of the networking effect of networked games. With the 3G networks, many cellular companies are also trying to increase airtime and kilobyte usage (the two methods they charge people by) to increase their plummeting revenues. A company in Sweden launched a wireless Assassins game last year which addicted many people. There were housewives who had seen their husbands leave their warm beds to go shoot someone on the other side of the city. So, Dope Wars most certainly is a very suitable game for such addictive, networking games and with so many versions being already developed by many people for so many different platforms, it's unimaginable to see a networked Palm OS version pretty soon.

Content & Psycho-social Impact

Various versions of Dope Wars have also created a lot of controversy. Some users think that because of its addictive nature, and because it reduces the extremism of being a drug dealer by simulating and making you one, it addicts people to drugs.

Some users who have used it also mention the same thing on CNET reviews: "This game isn't for everyone. Much like the popular Grand Theft Auto series, the subject matter is of the seedy underworld of life. However, for the mature audience who don't get offended by this subject, it is some great fun. The game is simple on the surface, the entire game is played through menus, but it is still very deep and involving. Also, it's a small download, so there's no harm in just checking it out."

Another user argues against this and simply expects people to consider it a cool game "And besides, I hate political correctness. You "thumbs-down"-ers kill me! You download a game called "DOPE WARS" into your PDA and then you whine about how it offends your delicate sensibilities. For those who were hurt by this

game, it is my sincere heartfelt hope that pixies and elves will drop by to cheer you up. But for those of us who enjoy a bit of mindless fun from time to time, this is a cool enough game."

The magazines also have different points of view on the matter. While Billboard magazine, which is more "hip" called it "the coolest game to play", more conservative George talked about Kansas Senator Sam Brownback's complaints about the game in a congressional hearing on violence in the media "...the problem isn't just that the game turns office workers into narc-dealing junkies but how easily it can be obtained, This game is about buying and selling illegal substances. And it's free online."

It's true however that the game is considered to be only for "mature audiences" even on the CNET downloads listings because of its contents. One might wonder what John E. Dell would have thought about his game as a violent game when he first released it in 1984. The Entertainment Software Rating Board which rated the games and marked the games' packaging to indicate the suggested age of the players and warnings for violent content was created in 1994, after a Senate investigation. So we can see a steep change on the view of Dope Wars ever since. Games are being taken more seriously now than they were before for sure.

In the USA Today article, the Drug Enforcement Agency's special agent John Lunt's comment is included: "This game, at least subtly, if not overtly, glamorizes being a drug dealer. He is particularly concerned that one way for *Dope Wars* players to escape trouble is to shoot a cop. "If (the police) don't win every time, it's sending the wrong message."

Most people disagree with these though and believe that no logical person is going to start dealing drugs or shooting cops after playing this game. Ultimately, it's a game, and it's not any more violent than classics such as Grand Theft Auto or Quake. But it's just interesting to see how much controversy and addiction such a simple game can create.

Ultimately, the game doesn't stop at Dope Wars, for those who are not the "legal age" to play the game, or people who find the game too violent, there is Solar Wars or any other derivation of Dope Wars and the attraction of money is still not illegal so Dope Wars' legacy will still keep going on thanks to its offspring.

Conclusion

Between the first version by John E. Dell and the still ongoing versions produced all over the world, Dope Wars has had a greater impact than many other games. There has been various versions of it made for many different computer platforms ranging from Mac to Unix, at the same time, Dope Wars created game programmers from its addicted audience, in that way has had an educative value. It has had a huge impact on the way people use their PDAs in the work environment, and the way PDAs are now considered a hybrid game/business device, which has created a new target market for game software makers and put Game Boy's future into question. In addition to all these, Dope Wars is one of the most controversial and addictive games ever made with recognition for its controversy even reaching the Senate and the DEA, as well as reputable magazines such as Billboard and George.

Being such a simple game, Dope Wars achieved many things an advanced game would dream of achieving. In addition to this, Dope Wars will continue to affect our society and spread the controversy as it makes its way onto hybrid PDA/phone devices to work on 3G networks. We will most likely see a networked version mysteriously pulling husbands and maybe even their wives out of their beds to deal drugs, on the other side of the town.

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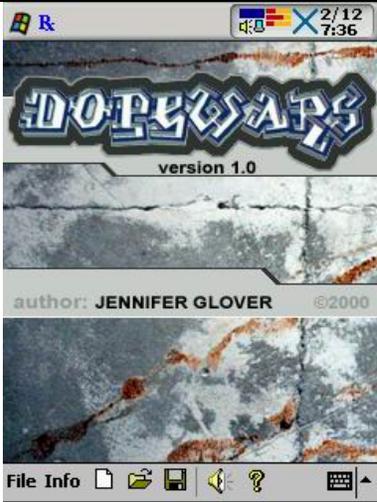
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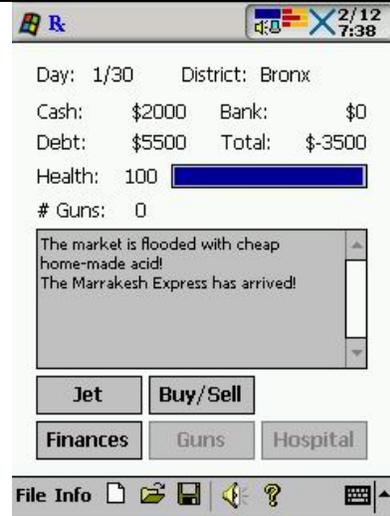
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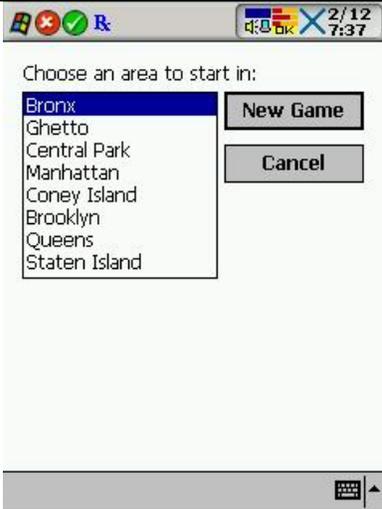
Picture Appendix



Opening screen of Jennifer Glover's Windows CE version



The events and the status screen.

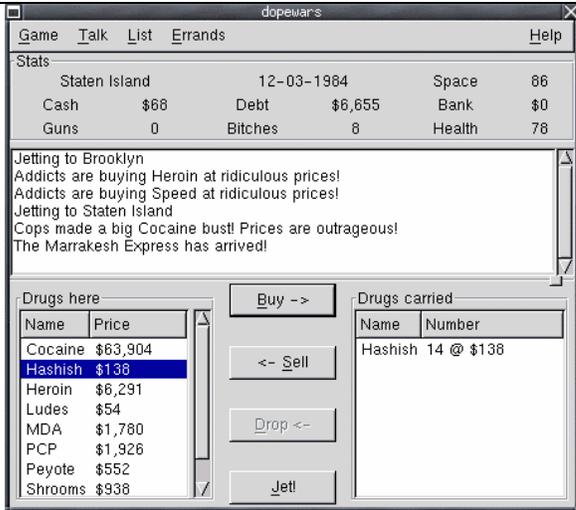


Map Screen



The Market Status Screen

Windows CE Version by Jennifer Glover



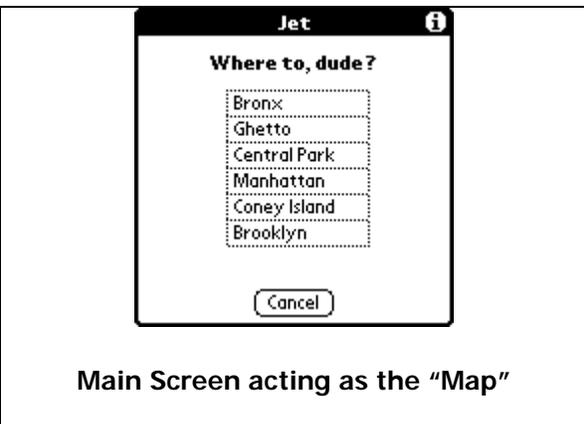
The interface of the multiplayer SourceForge version.



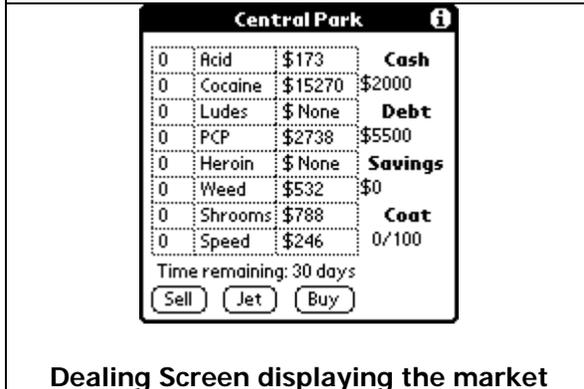
Initial SourceForge version based on John E. Dell's version.



Opening Screen of Matt Lee's PalmOS version



Main Screen acting as the "Map"



Dealing Screen displaying the market



Messages about events...

status and the personal information.

Central Park ⓘ

0	Acid	\$1384	Cash
0	Cocaine	\$15270	\$2000
0	Ludes	\$None	Debt
0	PCP	\$2738	\$5500

Buy a Bigger Coat

ⓘ **Would you like to buy a trenchcoat with more pockets for \$200?**

Messages about "opportunities"