

HOLD IT IN YOUR HAND AND PLAY WITH IT

THE DESIGN OF GAMES FOR MOBILE PHONES

IEE EVENING LECTURE

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WHY BOTHER?

- IT'S **EASY** TO DO!
- IT'S LOTS OF **FUN!**
- IT **DOESN'T** (YET!) NEED
 - EXPENSIVE **DESIGN TOOLS**
 - EXPENSIVE **ARTISTS**
 - **YEARS** OF EXPERIENCE
- IT HAS **MAJOR KUDOS!**
 - "I PROGRAM **NUCLEAR POWER STATIONS**" - YAWN!
 - "I PROGRAM **COMPUTER GAMES**" - SWOON!
- BUT **BECAUSE** OF THIS
 - IT'S HUGEY **COMPETITIVE**
 - SUCCESS RELIES ON **QUANTITY** AS WELL AS **QUALITY**
 - IT'S A **BUYER'S MARKET**
- DON'T EXPECT TO **MAKE MILLIONS** DOING THIS

MOBILE PHONE GAMES

- **LOTS OF DIFFERENT POSSIBILITIES**
 - **HANDSET GAMES** (E.G. SNAKE)
 - **SMS** (AND MAYBE SOON **MMS**)
 - **J2ME AND BREW**
 - "JAVA 2 MICRO EDITION"
 - "BINARY RUNTIME ENVIRONMENT FOR WIRELESS"
 - DON'T FORGET **REGULAR** PHONE GAMES (F.I.S.T.)
 - BUT WE **SHALL**, BECAUSE EVERYONE **ELSE** HAS...
- DRIVEN BY **BUSINESS NEEDS OF OPERATORS**
 - IN **UK**, THAT'S ORANGE, VODAFONE, O2 AND T-MOBILE
 - KEEN TO INCREASE **ARPU** ("AVERAGE REVENUE PER USER")
 - KEEN TO JUSTIFY **ASTRONOMICAL** 3G LICENCE EXPENDITURE
 - KEEN TO **DIFFERENTIATE** SELVES FROM OTHER OPERATORS
- BUT THE MARKET IS **CONTROLLED** BY **AGGREGATORS**

DEMOGRAPHICS

- WHO PLAYS? **WHERE? WHEN? WHY?**
- **VERY** HARD TO FIND OUT
 - INFORMATION EITHER **DOESN'T EXIST** OR IS **NOT RELEASED**
- "YOUR GAME WAS PLAYED FOR **1,000,000** MINUTES LAST MONTH"
 - **10,000** PEOPLE PLAYING **100** MINUTES EACH?
 - **100,000** PEOPLE PLAYING **10** MINUTES EACH?
- WHAT **IS** KNOWN:
- **FOUR** MAIN DEMOGRAPHIC GROUPS
 - **TEENAGERS** (FICKLE EARLY-ADOPTERS)
 - **GENERATION Y** (18-24, ATTRACTED TO BRANDED CONTENT)
 - **GENERATION X** (24-35, MORE DISCERNING OF QUALITY)
 - **CORPORATE** (PUZZLES, GAMBLING GAMES, COST NOT IMPORTANT)
- MOST MOBILE PHONE GAMES ARE PLAYED BETWEEN **9PM** AND **MIDNIGHT** ON **WEEKDAYS**
- **50/50** SPLIT BY **GENDER**

BUT FIRST...

- **WAP**
 - "WIRELESS APPLICATION PROTOCOL"
- CAME IN WITH A **BLAZE** OF PUBLICITY
- HIT **BIG-TIME** PROBLEMS
 - WENT FOR **LOWEST COMMON DENOMINATOR** PLATFORM
 - NO **ONE-TOUCH** BUTTON READ
 - NO **PUSH**
 - HTML WITH ALL THE **INTERESTING** BITS **TAKEN OUT**
 - SOFTWARE HANDSET SIMULATORS WORKED **BETTER** THAN THE HANDSETS THEY SIMULATED
 - NO VIABLE **BUSINESS MODEL**
 - RHYMED WITH "CRAP"
- **MOST** PROBLEMS EVENTUALLY FIXED IN LATER STANDARDS
- AS A **GAME** PLATFORM IT'S **DEAD** THOUGH (EXCEPT IN **CANADA**)

SMS GAMES

- POPULAR IN **EUROPE**
 - **25P** PER SMS MESSAGE
 - SOME GENERATE **1,000,000** SMS MESSAGES A **MONTH!**
 - PEOPLE **ACCEPT** THAT THEY HAVE TO **PAY** FOR SMS
- POPULAR IN **ASIA**
 - BUT **NOT** SO MONEY-SPINNING
 - EVEN **MMS** MESSAGES IN JAPAN ONLY COST ABOUT **4P**
- **UNPOPULAR** IN **USA**
 - MOBILE PHONES CAME **AFTER** INTERNET
 - PEOPLE STILL PREFER **INSTANT MESSENGER** SERVICES (WHICH ARE **FREE**)
 - **INTER-OPERABILITY** BETWEEN NETWORKS ONLY JUST ARRIVED
 - CALL **RECEIVER** PAYS COST OF A CALL (WHAT THE **BLUE CHEESE!?!**)
 - SMS UPTAKE IS **GROWING** QUICKLY, BUT BASICALLY **FREE**

SMS DESIGN

- GAMES ARE **SERVER**-BASED
- AIM IS TO **ENCOURAGE** TRAFFIC
 - **MULTI-PLAYER** IS BEST FOR THIS
 - PLAYERS SEND **EACH OTHER** MESSAGES VIA **YOUR** SERVER
- MAIN **PROBLEMS**
 - SMS MESSAGES ARE **160 CHARACTERS** IN LENGTH, **MAXIMUM**
 - OR **130** FOR TRANSLATION INTO **GERMAN**
 - PEOPLE WON'T THUMB IN **>30** CHARACTERS **THEMSELVES**
 - SMS MESSAGES ARE **NOT** GUARANTEED TO
 - ARRIVE IN THE **ORDER** IN WHICH THEY WERE SENT
 - ARRIVE
 - YOU HAVE A CHOICE BETWEEN THE **SAME** AND THE **SAME**
 - TAMAGOCHI CLONES, DATING "GAMES", PERSONALITY "TESTS"...
- LIKE EMAIL, GOOD POTENTIAL AS **AUXILIARY** FOR SOME **OTHER** GAME

HANDBET GAMES

- ORIGINALLY, DEPENDED ON HANDBET
- BUT NOW, THERE ARE **RUNTIME ENVIRONMENTS** YOU CAN USE!
 - AND **87** HANDBETS TO USE THEM, WITH DIFFERING CAPABILITIES
 - 25 DIFFERENT SCREEN RESOLUTIONS, FROM **96x64** TO **640x200**
 - AVAILABLE MEMORY BETWEEN **30K** AND **50K+**
 - DIFFERENT **DECOMPRESSION** ALGORITHMS. HACK THOSE GRAPHICS!
- **EUROPE** & MOST OF **ASIA** USE **J2ME**
- **USA** IS HEADING FOR **BREW** (GEE, **THANKS** VERIZON)
 - LIKE **NTSC** V **PAL** FOR TELEVISION STANDARDS
- MOST HANDBET GAMES ARE LIKELY TO BE **STAND-ALONE**
 - PHONE LINK IS PRIMARILY FOR **DOWNLOAD**
 - MULTI-PLAYER GAMES **NOT** ON WISH-LISTS **AT THE MOMENT**
- **BRANDING** IS SEEN AS THE KEY, NOT **GAMEPLAY**
 - **GOOD** LICENCE, **BAD** GAME BEATS **BAD** LICENCE, **GOOD** GAME

J2ME

- **EUROPE'S FAVOURITE**
- **OPEN STANDARD**
 - BUT **96x64 B&W** SCREEN IS MINIMUM
 - **NOKIA** HAVE GUARANTEED THEY'LL ONLY USE **4** DIFFERENT SIZES & COLOUR DEPTHS
 - **YAY** FOR NOKIA!
 - SEVERAL JAVA **SPECIFICATION REQUESTS** IN PLACE TO FORMALISE THIS STUFF
 - BUT WILL HANDSETS DEVELOP SO **FAST** THESE BECOME **REDUNDANT?**
- **UNDEFINED BUSINESS MODEL**
 - **NONE** OF THE POSSIBILITIES ARE FAVOURABLE TO DEVELOPERS
- NO **DISTRIBUTION RESTRICTIONS**
- CAN **RECYCLE** EXISTING CONTENT (AKA "OLD GAMES")
- SUPPORTED BY **MORE** HANDSETS

BREW

- BASED ON **C/C++**
- **PROPRIETARY** STANDARD (QUALCOMM'S)
 - GOOD **API**, WITH MORE GUARANTEES
- **EXCELLENT** BUSINESS MODEL
 - **80%** GOES TO DEVELOPER!
 - WITH J2ME, TYPICALLY 80% **DOESN'T!**
- MAJOR **TESTING** REQUIREMENTS
 - **\$700** FOR 2ND AND SUBSEQUENT ATTEMPTS
 - VERY CONSOLE-LIKE
- ONLY WORKS ON **CDMA** PHONES AT THE MOMENT
- **JVM** TO RUN **ON TOP OF** BREW IS PLANNED
- **OTHER** SERVER-SIDE ENGINES EXIST, BUT ARE **OUT** OF IT
 - **EXEN** ("EXECUTION ENGINE")
 - **WGE** ("WIRELESS GRAPHICS ENGINE")

DESIGNS

- EXTENSIVE USE OF **BACK CATALOGUES**
 - **MORE** ONCE GAMES (CONSOLE) PUBLISHERS WISE UP TO IT
- BUT THESE **DON'T** USE **3G PHONE** CHARACTERISTICS
 - OR, INDEED, **ANY** PHONE CHARACTERISTICS
- ALSO, THEY'RE **NOT MAINSTREAM**
- **SOME** COMPANIES ARE LOOKING FOR OTHER WAYS TO EXPLOIT THEIR PLATFORMS
 - **MULTI-PLAYER** GAMES
 - **GPS** DATA
- POTENTIAL FOR GENUINELY **ORIGINAL** GAMES HERE

MULTI-PLAYER

- **CLIENT/SERVER** ARCHITECTURE
- MEANS GAMES CAN BE MORE complicated
- PROCESSING DONE ON A **PROPER** COMPUTER
- PROBLEMS ARE **WELL UNDERSTOOD** FROM THE **INTERNET** EXPERIENCE
 - **IF** THEY ASK THE RIGHT PEOPLE
 - "HOW **HARD** CAN IT BE?"
- NO PROBLEMS WITH SOFTWARE **THEFT**
- **CLIENT** REQUIRES SPECIALIST TOOLS TO **HACK**, TOO
 - BUT IT'LL **HAPPEN...**
- NATURE OF GAME **STILL** DEFINED BY (IN)ABILITIES OF **HANDSET** THOUGH
- MULTI-PLAYER **API** PROBLEMS
 - **BREW** DOESN'T HAVE ONE
 - **J2ME** DOES, BUT AS BESPOKE **EXTENSIONS**

GPS

- SURPRISINGLY **LIMITED** NEW GAME DESIGN OPTIONS...
 - YOU CAN TELL WHERE SOMEONE IS, **ROUGHLY**
- SO THAT'S **TREASURE HUNT**
 - GO TO **TRAFALGAR SQUARE**. GO TO **HYDE PARK**. GO TO ...
 - TOWN TRADING. **GRIMSBY** AND **CARDIFF** FOR **CARLISLE?**
- ROLLING ELECTIONS
- INVISIBLE **MAZES**, GIANT **MINESWEEPER**
- MORE **INTERESTINGLY**, YOU CAN TELL WHO SOMEONE IS **NEAR**
- LAN-LIKE GAMES
- VOTIVE GAMES
- CELL WARFARE
- SO FAR, **NO** MAJOR GAMES USE GPS
- SOME ATTEMPTS BY ADVERTISERS, BUT **DISMAL** FAILURES

EXAMPLE

- HERE'S WHAT **A STATE OF THE ART** J2ME GAME LOOKS LIKE



THE **COLOUR** SCREEN IS BECAUSE IT'S **NOKIA-SPECIFIC**

- PRETTY **GOOD**, BUT NOT QUITE **GAMEBOY ADVANCE** LEVEL YET...

HOWEVER...

- **HYBRID** PRODUCTS ARE ON THE HORIZON
- SAGEM MYG-5
 - CONSOLE-LIKE **CROSS-SHAPED** ROCKER BUTTON AND KEYS
 - MIDI & .WAV **SOUNDS**, 101X80 PIXEL **SCREEN**
 - **OUT NOW** IN THE UK (ON **ORANGE**)
 - USES **EXEN** AS ITS RUNTIME ENVIRONMENT.
 - **OH-OH...**
- NOKIA'S **N-GAGE** GAME DECK PLATFORM
 - **J2ME** ENABLED SYMBIAN O/S
 - GAMES AVAILABLE ON **MEMORY CARDS**
 - DUE HERE **FEBRUARY 2003**
- MICROSOFT'S **WINDOWS CE** SMARTPHONE
 - SORT OF APPEARED LAST MONTH
 - A YEAR LATE, NOT A GAMES PLATFORM, BUT IT'S MICROSOFT...



SUMMARY

- MOBILE PHONE GAMES
 - USE **CHALLENGING** (I.E. **IMPOVERISHED**) PLATFORMS
 - ARE **QUICK** AND **CHEAP** TO PRODUCE
 - STILL REWARD **IMAGINATION** OVER **DERIVATION**
 - **DON'T** MAKE POTS OF MONEY
- **DELIVERY** OF GAMES IS STILL CHANGING **RAPIDLY**
 - SMS RULES **NOW**, BUT FOR HOW LONG?
 - **LOOK OUT!** HERE COMES **AMERICA!**
 - **BRANDS 'R' US**
 - **J2ME** AND **BREW** WILL RULE WITHIN 5 YEARS
 - FOR CERTAIN DEFINITIONS OF "WILL" ONLY
 - GETTING PEOPLE TO **PLAY** YOUR MOBILE PHONE GAME IS **TOUGH**
- INVOLVEMENT OF **REAL GAMES COMPANIES** COULD SPELL THE END
 - THEY ACTUALLY **PLAN** TO RAISE THE BARRIER FOR ENTRY!
- IF IN DOUBT, **INNOVATE!**