Beyond the Cell Phone

Introduction & Historical Perspective
1870s; Elisha Gray and Alexander Graham Bell
http://en.wikipedia.org/wiki/Model_500_telephone
1951;
http://www.the-adam.com/adam/rantrave/ibm_360.jpg
1964 and 1978
Mobile Telephony
Early car phone
1960s

A social history of the mobile telephone with a view of its future
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DynaTAC is a series of cellular telephones manufactured by Motorola, Inc., from 1983 to 1994. With several different models, plus newer models under the Classic and Ultra Classic names, it was the first line of cell phones commercially produced by Motorola, with the first member of the DynaTAC series, the 8000x, being the first cell phone to receive U.S. Federal Communications Commission (FCC) acceptance in 1983.[1]

Bell and Motorola comestion
Wall Street
(1987)
The first smartphone was called Simon; it was designed by IBM in 1992 and shown as a concept product that year at COMDEX, the computer industry trade show held in Las Vegas, Nevada. It was released to the public in 1993 and sold by BellSouth. Besides being a mobile phone, it also contained a calendar, address book, world clock, calculator, note pad, e-mail, send and receive fax, and games. It had no physical buttons to dial with. Instead customers used a touch-screen to select phone numbers with a finger or create facsimiles and memos with an optional stylus. Text was entered with a unique on-screen "predictive" keyboard. By today's standards, the Simon would be a fairly low-end product; however, its feature set at the time was incredibly advanced.
Fax, Email SMS
Blackberry “Quark” Series
2002
The mobile telephone has been

“... a way of rebuilding economies
in eastern Europe, an instrument of
unification in western Europe, a
fashion statement in Finland or
Japan, a mundane means of
communication in the USA... an
agent of political change in the
Philippines”

J Agar, "A Global History of the Mobile Phone"
Mobile Computing
Released in 1981 by the Osborne Computer Corporation, the Osborne 1 is considered to be the first true portable computer - it closes-up for protection, and has a carrying handle. It even has an optional battery pack, so it doesn't have to be plugged into the 110VAC outlet for power.

While quite revolutionary, the Osborne does have its limitations. For example, the screen is only 5" (diagonal) in size, and can't display more than 52 characters per line of text. To compensate, you can actually scroll the screen display back and forth with the cursor keys to show lines of text up to 128 characters wide.

The Osborne was designed with transportation in mind - it had to be rugged and able to survive being moved about. That's one reason that the screen is so small - a larger and heavier screen would be more susceptible to damage.

The two pockets beneath the floppy drives work great for floppy disk storage, although the Osborne modem also fits perfectly in the left pocket and plugs into the front-mounted "modem" port.

Designed as a true portable computer system - it can be considered airline carry-on luggage, and it will fit under the passenger seat of any commercial airliner.

It probably wasn't the company's fault, since by this time most of the serious computer users were gravitating towards the new IBM PC, which had already been available since 1981.

Anything that wasn't IBM compatible was bound to fail. In 1983, the Compaq Portable came out - a portable computer similar to the Osborne, except that it was IBM compatible and ran MS-DOS. It was a great success.
Compaq Computer Corporation was founded in February 1982 by Rod Canion, Jim Harris and Bill Murto, three senior managers who left Texas Instruments and invested $1,000 each to form their own company. Sketched on a paper place mat in a Houston pie shop, the first product was a portable personal computer able to run all of the software being developed then for the IBM PC.

The Compaq Portable was the first 100% compatible IBM computer clone. Why make an IBM clone? Because the IBM PC was extremely popular, and taken very seriously by businesses looking for a computer system.

Problem: Compaq couldn't just copy IBM's BIOS to make their new machine guaranteed IBM compatible, this would be illegal, and easily proven by IBM.

Solution: Reverse-engineer IBM's BIOS. Compaq used two sets of programmers - one group analyzed the original code and made notes of exactly how it responded. The second group took these notes, and wrote their own BIOS that performed exactly the same.

After one year and a million dollars, they were successful. They had a legal BIOS identical in operation to that of the IBM computer.
http://en.wikipedia.org/wiki/Grid_Compass
Bill Moggridge’s earlier GRiD Compass 1101. This was the first portable with a clamshell design – a plasma screen was built into the lid – it was designed and built in 1979 and popular with the military and NASA

Designed to be the ultimate portable computer, the clamshell-style **GRiD Compass 1101** is the grand-daddy of all present-day laptop computers.

The Compass is very high-tech, with its flat-black, die-cast magnesium-alloy case, and bright, sharp electroluminescent display (ELD). No other system packed so much speed and power in as small a case, and none had such a unique and large, easy-to-read screen, allowing full 80x24 text.

Of course, all of these great features raised the price significantly. At $8150, the GRiD Compass 1101 was the most expensive personal computer you could buy.

**GRiDManger** -communication and utility functions
-GRiDPrint-control format and appearance of text files
-GRiDWrite-full-screen text editor
-GRiDPlan-electronic worksheets
-GRiDFile-database facilities
-GRiDPlot -converts data to graphs
-GRiDBASIC-programming language
The Psion Organiser I model, launched in 1984, was based on an 8-bit Hitachi 6301-family processor, with 4K of ROM and 2K of battery-backed RAM, and had a single-row monochrome LCD screen. The machine provided a simple flat-file database, calculator and clock, and had no operating system. The Organiser I supported removable storage write-once devices which used EPROM storage.

The first Organiser II models featured a two-line display. The machine had vastly more application functionality, including a number of built-in application programs, a diary and alarm clock, and featured end-user programmability in the form of the successful Organiser Programming Language (OPL), a BASIC-like language which was compiled to intermediate code, in contrast to the interpreters which were commonly available for other consumer computers of the time.

The Organiser II was widely used for commercial applications in companies such as Marks and Spencer, where it was used on the shop floor, and in the world's first large scale application of mobile technology in government where over 3000 were used for benefit calculations by the Employment Services department of the UK government.
Ubiquitous Computing / Weiser 1989/92

The PARCTAB mobile hardware (tab for short) is depicted in the picture above. Positioned over the display is a touch sensitive panel that can be operated coarsely with a finger or more accurately with a passive stylus. Both the touch panel and the display have a resolution of 128x64 pixels. The grip part of the tab incorporates three finger-operated mechanical buttons that can be used individually or in chords. Finally the unit includes a piezo-electric speaker that permits a number of different tones to be generated by applications.

The tab communicates using infrared signals at a speed of 19.2k baud. The spread of infrared emissions are contained by the walls of a room providing room-sized communication cells. The small cell size provides good aggregate bandwidth as long as few active units are in each cell. The room-sized cells employed by the communication network also generate location information used by higher level software.

Power management was an important consideration. For a compact and low power design we built the unit around a 12MHz Intel 8051 family 8-bit microcontroller with on-board EPROM, RAM and I/O ports. The tab can operate under nominal use for 10 minutes per hour, 8 hours per working day for about a week before needing to be recharged.

To foster casual use our design also paid special attention to ergonomic factors. The PARCTAB is designed into a custom, production-quality, plastic case with a removable belt clip, and is about half the size of current commercial PDAs. The package is symmetric and can be used in either hand. When converting from left to right hand use, a setup command rotates the display and touch-screen coordinates by 180 degrees.
The Newton project was a PDA platform. The PDA category did not exist for most of Newton's genesis, and the "personal digital assistant" term itself was coined relatively late in the development cycle by Apple's then-CEO John Sculley,[1] the driving force behind the project. Newton was intended to be a complete reinvention of personal computing. For most of its design lifecycle Newton had a large-format screen, more internal memory, and an object-oriented graphics kernel. One of the original motivating use cases for the design was known as the "Architect Scenario", in which Newton's designers imagined a residential architect working quickly with a client to sketch, clean up, and interactively modify a simple two-dimensional home plan.\(^{\text{citation needed}}\) The Newton project fell victim to project slippage, scope creep, and a growing fear that it would interfere with Macintosh sales. It was reinvented as a PDA platform which would be a complementary Macintosh peripheral instead of a stand-alone computer which might compete with the Macintosh.
http://en.wikipedia.org/wiki/Palm_(PDA)