Intel's right-hand turn: Paul Otellini prepares to take charge at Intel next week, is the giant chipmaker heading in the right direction?

When it was confirmed last November that Intel's new boss would be Paul Otellini, the firm's chief operating officer and heir apparent for several years, nobody was surprised. The firm's succession planning is famed for being as clean and efficient as the factories where it makes its chips, and Craig Barrett, the retiring chief executive, who steps down on May 8th, has long seen Mr Otellini as his right-hand man. But Mr Otellini is Intel's right-hand man in another sense, too. For he is the architect of the firm's new strategy - change of direction that Mr Otellini calls a "right-hand turn". The world's largest chipmaker now faces three big challenges-but Mr Otellini believes his plan can address all of them at once. Is he right? The first challenge is technical. For years, Intel has consistently improved the performance of its chips by making them run at higher and higher clock speeds (measured in MHz or GHz). But it has now hit a wall. As chips get faster, they consume more power and generate more heat. It also becomes harder to keep all the parts of a chip marching in step.

Intel, along with its rivals, is embracing a new approach to chip

Intel Corporation in Summary

For over 35 years, Intel Corporation has developed technology enabling the computer and Internet revolution that has changed the world. Founded in 1968 to build semiconductor memory products, Intel introduced the world's first microprocessor in 1971. Today, Intel supplies the computing and communications industries with chips, boards, systems, and software building blocks that are the "ingredients" of computers, servers and networking and communications products. These products are used by industry members to create advanced computing and communications systems. Intel's mission is to do a great job for our customers, employees, and stockholders by being the pre-eminent building block supplier to the worldwide digital economy.

design, in which performance is improved not through higher clock speeds, but by adding further processing "cores" to its existing chips. A "dual-core" chip can, at least in theory, deliver twice the number-crunching performance of a single-core chip, but at the same clock speed. In practice, the software on the chip must be rewritten to exploit multiple cores, but such software is becoming increasingly common.

The second challenge is that the personal computer (*PC*) market has matured. Intel still makes most of its money selling the processor chips at the heart of *PCs*. Mr Otellini's predecessors, who ran the firm when the Pc was in the ascendant, could rely on an expanding market to provide double-digit growth for Intel. Mr Otellini cannot, and must find new sources of growth, in the rc market and beyond it.

The third challenge is the growing competitiveness of Intel's main rival, Advanced Micro Devices (AMD). In recent months Intel has suffered a string of embarrassments, some self-inflicted (such as the cancellation or delay of several new products), but others at the hands of aMn. Notably, aMn devised a clever way to enable chips to handle data in both 32-bit and 64-bit chunks, which improves their performance. Having spent years developing an entirely new 64-bit chip, Itanium, Intel was loth to undermine its prospects by adding 64-bit support to its 32-bit Pentium and Xeon chips. But last year it did just that, to remain competitive with AMD). As a result, Itanium is probably doomed.

Mr Otellini's response to all of these challenges is the "right-hand turn". First, Intel must change how it designs chips. As well as switching to a dual-core (and then multi-core)

approach, the firm is starting to integrate other functions, such as security and networking features, on to its chips.

That points the way to the second part of Mr Otellini's plan: "platformisation". Rather than just selling processing chips to PC-makers, Intel intends to offer them entire "platforms"-bundles consisting of a processor, its ancillary chips and networking components, and the software needed to tie them all together. By doing this, Intel hopes to sell more components, thereby taking a larger cut of the selling price of each *PC*. It also hopes to boost demand by devising specific platforms for several promising new markets, such as home entertainment, mobile devices and health care.

This strategy, it hopes, will also enable Intel to outflank its rivals, which specialise in particular kinds of chips, such as processors (as in the case of AMD) or networking (Broadcom). rc-makers, goes the theory, would rather buy a single integrated package from Intel than assemble components from several other suppliers.

A man with a plan

This all sounds good in theory. But will it work in practice? When asked, Intel executives invariably cite the success of Centrino, the firm's laptop platform, which combines a processor with a Wi-Fi networking chip, software and other supporting components. Centrino, launched in 2003, is the model for how Intel intends to sell chips in future. Rather than ask for "Intel inside", laptop buyers can now demand "Centrino inside". This encourages Pc-makers to buy the entire platform.

Intel Corporation in Summary

For over 35 years, Intel Corporation has developed technology enabling the computer and Internet revolution that has changed the world. Founded in 1968 to build semiconductor memory products, Intel introduced the world's first microprocessor in 1971. Today, Intel supplies the computing and communications industries with chips, boards, systems, and software building blocks that are the "ingredients" of computers, servers and networking and communications products. These products are used by industry members to create advanced computing and communications systems. Intel's mission is to do a great job for our customers, employees, and stockholders by being the pre-eminent building block supplier to the worldwide digital economy.

Intel is now working on two similar platforms for home and office desktop machines, nicknamed "Desktrino", due to be launched later this year. In January Mr Otellini reorganised Intel into platform-specific divisions, including digital home (for consumer *PCs)*, corporate (business *PCs* and servers), mobility (laptops and mobile devices) and health care, which Intel regards as a promising new market.

Will it work? Consider Centrino. When it was launched, several laptop-makers initially turned their noses up at Intel's Wi-Fi chip, and decided to buy only Intel's laptop processor chip, which they combined with Wi-Fi chips bought from other vendors. Only when Intel's Wi-Fi chip came up to scratch did laptop-makers opt for the whole Centrino package. "It took a while for the Centrino model to work," says Dean McCarron of Mercury Research, a market-research firm. The platform model will only succeed, he says, if all the components are competitive in their own right.

While Intel has a good chance of getting the platform model to work in desktop *PCs*, breaking into new markets may prove much harder. Intel has yet to make any headway in the mobile-phone market; indeed, merging its laptop and mobile businesses into a single "mobility" division means that continuing losses in communications chips are helpfully obscured by the

bumper profits from Centrino. Its prowess in processors is unquestioned, but Intel is still to prove itself when it comes to radio chips. It must do so if it is to realise its high hopes for new markets such as smartphones and wireless broadband (Intel is the main cheerleader for WiMax, a new wireless broadband technology). "They don't have a significant technological advantage over the incumbents in the cellphone business," says Kevin Krewell of *Microprocessor Report*, an industry journal. "Until they come up with something truly unique, they're just going to be a metoo player."

There are other worries too. Dell, the world's top Pc-maker and one of Intel's closest allies, has hitherto chosen not to use aMn's chips. But Kevin Rollins, Dell's chief executive, admitted in February that his firm came close to changing its mind last year, following product delays and other problems at Intel. Dell is careful never to rule out abandoning its Intel-only policy. If Dell ever changes its mind, Intel's market share in *PC* processors, which has exceeded *80%* for years, could come under threat. Intel rewards Dell and other *PC*makers with generous discounts, in the form of marketing subsidies, to keep them loyal. Dirk Meyer, the number two at AMD, says that Intel has a "stranglehold" over Pc-makers. He points out that Japanese antitrust regulators recently ruled that Intel's business practices in that country, which are similar to those used elsewhere, were unfair. Mr Krewell, however, says that Intel had worse practices in the past, and has cleaned up its act.

As Mr Otellini takes the helm, Intel is already starting to move in the direction he has charted. The origins of the new strategy can be traced back to a speech he made in late aooi. Since then he has been gently steering the firm into its right-hand turn. He is the first boss of Intel to have a business and marketing rather than a technical background (though, as a 31 year veteran at the firm, he is hardly a technological novice). As Intel faces the challenges not just of designing chips in new ways, but of selling them in new ways too, Mr Otellini would seem to be the right man for the job. He has mapped out where he wants to take the company: now he must get it there.

A bit about AMD

The era of technology for technology's sake is behind us. Innovation driven by real customer needs — 'customer- centric innovation' — is the new path to leadership." –Hector Ruiz

Founded in 1969 and based in Sunnyvale, California, AMD provides microprocessors, Flash memory devices, and silicon-based solutions for our customers in the

communications and computer industries worldwide. However, our focus goes beyond integrated circuits and transistors. AMD is committed to helping our customers — and their customers — take advantage of the phenomenal capacity of silicon to add value and help differentiate their offerings. To that end, AMD products are developed with customer needs always in mind and not for the sake of innovation alone. Stated more plainly, it means that AMD exists to provide real solutions for real customer problems that exist in the real world today. We refer to this philosophy as "customer-centric innovation," and it represents the guiding principle behind everything we do at AMD.

The three keys to AMD's customer-centric innovation.

You are asked to answer all 5 of the following questions. Each question has the same weight (10% each) towards the final examination mark (50%).

Q1. Drawing on your knowledge on Leadership discuss the traits of the new CEO and discuss the challenges he faces.

Q2. Using the ARC model discuss the strategic alignment of the company today and how you would change the company based on this model and its hypothetical future.

Q3. What are the major strategic learnings for AMD and what other strategic options do you think AMD could adopt in the future.

Q4. As a consumer briefly describe your vision for Intel for the next 20 years and propose a mission statement.

Q5. What other strategy development models would you suggest to assess the external environment and why?