

A Visit to...Hewlett Packard Barcelona

Hewlett Packard (HP) celebrates the twentieth anniversary of its Barcelona site this year. The company has a portfolio spanning printing, personal computing, software, services and IT infrastructure, and Barcelona is the nerve centre of its predominant large-format printing activities. On 3rd and 4th April 2008 the international professional press was invited to look "Behind the Scenes"™.

"Our workforce in Barcelona consists of more than two thousand people, including employees working in our engineering and support facilities," Francois Martin introduces us to the facility. Since 2006 he has been marketing director for Graphic Arts. As might be expected, nearly 75% of the workforce employed at the Barcelona site is of Spanish nationality, while nearly a quarter originate from other European countries and 3% come from the US. "Around two-thirds of our employees have a university degree," Martin proudly continues. "Our workforce is relatively young, average age 34 years. In 1988 we moved from San Diego in the US, to Spain, and we have thus been exactly twenty years in Barcelona. Surely a moment to celebrate?" Barcelona is not a manufacturing facility; today it is the global centre of the graphic-arts business. "We focus on innovation and R&D to maintain our leadership in large-format printing; based on 2007 figures, our current revenue market share is 75%," says Francois Martin. "We are also a marketing centre. We hold worldwide responsibility for large-format imaging and printing and for graphic-arts enterprise solutions. In a European context, we are also responsible for services, including financial operations and consulting & support."

Product Portfolio

The graphic-arts business consists of a great variety of applications, and with its diverse product portfolio of large-format printers HP can cover a broad spectrum. "Business applications, including publishing, direct mail, info prints, label printing and photo speciality, are covered by the Indigo production line of digital offset presses. The large-format Designjet and wide-format Scitex series cover particular user needs for printing large-format, high-quality photographic imagery, and are also designed and developed for creating technical output for construction and GIS applications. Designjet and Scitex are also used for creating signage; for example, the huge 'Behind the Scenes' placard against the façade of our entrance building is printed using a Scitex system. Our speciality printing systems focus on mail and printing CDs and DVDs. Printing of packaging material can be done on all the systems mentioned." Manel Martinez, responsible for increasing and maximising revenue, market share and profit in the large-format printing division, joins us. "The printers particularly suited for CAD and GIS professionals are T610, T1100 and Z6100, and to date we have shipped a total of 27,000 units of these systems. And talking figures, in 2007 our growth, counted in units, was 9%. Our market share worldwide is now 65%, again counted in units. In 2007 in the large-format segment, we generated revenue of US\$ 1.8 billion." To put this number in perspective, HP overall revenue over fiscal year 2007 totalled US\$ 107.7 billion.

Distributed Printing

"A ubiquitous internet means graphic-art and technical designers, and many others, often collaborate on a temporary basis despite differing places of work," elaborates Marc Jongen, thus, "inducing a need for web-to-print solutions. Creative and technical content is produced at a variety of locations by several teams of designers and planners." Once the design process is completed, its rich content has to be disseminated to the people in the next stages of the process; the need is then for distributed printing. Prints are distributed via the internet and printed anywhere, anytime, as long as there are printing facilities available and these are connected to the internet. "This tendency is very clear when we look at Building Information Modelling (BIM)," continues Marc Jongen, who prior to joining HP worked with OCE, a printing and copying company based in Venlo, the Netherlands. "Today's technology enables the erection of complex constructions such as tall buildings and bridges, faster than ever before in history." As example he mentions the famous Torre Agbar in Barcelona, designed by French architect Jean Nouvel. This futuristic building was put up in 2004 and opened in June 2005 at an official inauguration ceremony performed by the king of Spain. But increasing speed of building also spawns a desire for improved co-ordination between partners responsible for each part of the process, from design to delivery. These include owners, architects, builders, system engineers, civil- and structural engineers. And the desire for better co-ordination is particularly fed by the wish to decrease operating costs and reduce liability. Counted in bits and bytes, web-to-print solutions have to tackle huge files, and we do not want our customers to have to bother about size and printer settings. The customer wants ease of use, and that is what we want to offer. This means it must be possible to select plans and maps by instant print button, and once the printer and paper size have been selected plans and maps automatically downloaded, scaled and printed. In this context, it is also appropriate to announce today that we have begun collaborating with Adobe Systems Inc to add PDF support to our Instant Printing Toolkit. The Instant Printing Toolkit 2.0 has been available since August 2007."

Customer Needs

What does a customer for a large-format printer want from the machine? Simply what any customer for any product wants: high capacity, high quality and low costs. Evolution in print technology has enabled cost cutting along with a concurrent increase in capacity and quality. The introduction of densitometers in printing devices has made them capable of self-calibration and automatic adjustment of separate ink input. The use of sensors not only improves quality but also reduces costs, as special paper can now be replaced by plain paper. More cost reductions have been achieved by moving from integrated ink systems to modularity, placing each ink in a separate reservoir. Joseph Tarradas, who has worldwide responsibility for new product development for the Designjet series, enthusiastically relates the technological developments he has witnessed since joining the firm in 1984. He demonstrates graphically how printing speed obeys Moore's Law; starting in 1992, the graph shows print speed nearly doubling every two years. This partly results from an increase in the number of nozzles on the print-head, which has also - doubled commensurately. By using four pairs of print-heads (a total of eight) a double-height swatch (43mm) can be realised, and this technology, in combination with miniaturised sensors, has doubled the speed of printing by the Designjet Z6100 without loss of quality. Print quality has been also improved by using more colours, from four to six, eight and even twelve. The more colours are used the more variety in grey and colour tones and the better visual appearance of the final product.

Real-world Conditions

After manufacture in plants in the US, South Africa, North Africa and Asia, product samples are taken out of storage and shipped to Barcelona. Here the printers are confronted with real-world situations, including harsh climate conditions and common, as well as exceptional, transportation circumstances. Entering the climate room, one gets the feeling of being enveloped in a hot, wet blanket; the conditions are those of a tropical rainforest. Room temperature is 30C and humidity reaches 80%: nearly complete saturation. The transportation environment reproduces such situations as offloading a truck at a port terminal by forklift and is simulated by placing the printer on top of a huge blacksmith's anvil, which generates random and harmonious vibrations. The printer should survive such torture without sustaining a scratch or components coming loose. It may not be excluded (for, as everybody knows, everything which can go wrong will eventually go wrong) that a printer, still packaged in protective material, might be let fall from a donkey cart, resulting in a hard encounter with bare concrete. The probability that this might happen is low, but the Law of Averages dictates it will, one fine day, undoubtedly and unexpectedly occur. To determine fall impact, controlled drops are carried out by special machine, hoisting a packaged printer to a predefined height and suddenly releasing it. A faint slapping sound marks the encounter with the ground. A pallet with package is dropped on each of the six faces of the box, and boxes without pallet are also dropped onto the eight corners and twelve edges.

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