# Intel's Broadwell may put an end to CPU swap-outs

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(Phys.org)—Never content to fixate on the next signpost on Intel's roadmap, Intel watchers are talking about what is beyond the Haswell processors toward its successor architecture, Broadwell. They say that Broadwell will not be offered as a land grid array (LGA)-based product but instead will signal a shift to a ball grid array (BGA). What this further means is that future Intel CPUs may come soldered to motherboards. This would mark the end to user -replaceable CPUs. Broadwell desktop CPUs will need to be soldered directly to motherboards. That places limits on users and system builders.

The talk is that 14-nanometer Broadwell will be offered only as a BGA product. If soldered onto a motherboard, there is no opportunity for users to swap out CPUs and mix-and-match motherboards. According to ZDNet, one of the sources indicating a shift, "Reports suggest that Intel is preparing to kill off PC upgrades by adopting the BGA rather than an LGA package." The way that processors are mounted on desktop motherboards would depart from the socket procedure, where a processor is socketed onto a desktop motherboard rather than soldered directly on, as with mobile devices such as tablets and laptops. A shift to BGA could end socket compatibility for Intel desktop processors. This limitation on standard desktop processors raises questions of what, if any, marketplace impact would ensue.

Most desktop users might not care; however, those who do want to do their own processor upgrades would notice should Intel take the route of soldering processors to a desktop board with Broadwell. They would miss the ability to upgrade and build their own systems should Intel make the move away from end-user, upgradeable CPUs. This may be seen as a drawback for DIY enthusiasts, including gamers, who like to choose from a variety of processors, depending on their needs.

Intel-watchers appear to be fairly confident that this is what Intel intends to do. "I have now independent confirmation from a PC building OEM, who declined to be named, along with two motherboard makers, that Intel has briefed them of the switch from LGA to BGA for Broadwell architecture processors," said Adrian Kingsley-Hughes in ZDNet. Broadwell chips are due in 2014.