

BCD-based Integration Platform for Analog ICs

A Significant Value-Added Opportunity for IC Vendors

ABSTRACT

The report focuses on an important new opportunity for traditional analog IC vendors as well as new market entrants – [an opportunity to significantly increase their market valuation and profitability](#). The historic path to sustained profitability was to participate in analog domain businesses; an area dominated by entrenched traditional analog IC vendors. The voltage gap between digital core devices and sensors, actuators, and power supplies has created a separate group of highly profitable analog IDM vendors – their well entrenched positions have been built since the IC industry's inception. Traditionally such analog products have been high-performance single-function ICs fabricated by proprietary processes and consistently generating 50%+ gross margins.

Insights provided in this report are the result of our analyses of analog IC vendors and, especially, of markets for power management ICs (PMICs) and increasing use of BCD (Bipolar-CMOS-DMOS) technology in PMICs. The BCD technology platform opens new business and market opportunities to nontraditional analog vendors as well as to new market entrants. The BCD value-added platform is an enabling technology vehicle for accomplishing profit and valuation improvement objectives. It is a technology that offers an attractive new strategic option for entering into the analog domain business in order to exploit the emerging integration opportunities, including previously discrete power transistors.

A system-oriented BCD platform has emerged in the analog domain, and its implementation has been accelerating in both the mainstream and advanced technology nodes since 2005. The BCD integration platform has already made traditional market segmentation and market size estimates largely obsolete.

Report findings are based on our bottom-up analyses of businesses, products, and technologies [of 20 analog vendors currently representing more than 60 percent of the total analog market](#). We validate and illustrate the change by numerous examples ranging from single-function ICs to highly integrated SoC solutions; the platform has already been implemented in all available application types, across the entire analog domain and levels of integration.

Section 2 provides an executive overview of [nineteen key findings and their implications](#).

Section 3 confirms that analog IC vendors have sustained high profitability and valuation; however, major changes in profitability and valuation of IC vendors have started and the economic crisis will accelerate them. [Small fables analog IC vendors are now achieving high performance previously reserved for established traditional vendors](#). The section introduces Petrov Group model of the analog signal processing system and relevant integration issues. It provides a comparison of alternative analog integration platforms in how they address those issues, and highlights the competitive advantages of the BCD technology platform. This section demonstrates with actual examples the technology platform's broad range applicability and cost-effectiveness contrary to popular perception.

Section 4 presents select actual product types and applications using the BCD technology platform to integrate the functionality of analog signal processing systems from sensors to actuators to power supplies. In this section, we relate these products to our model in order to reveal the current scope of analog integration and emerging trends. [The main purpose of this section is to demonstrate the current proliferation extent of the BCD technology platform across a broad range of applications and products](#).

Section 5 scopes the impact of the BCD technology platform on analog market segmentation and the competitive landscape. In addition, it reveals the emerging market opportunities for fables, fab-lite, and foundry vendors as well as new market entrants. This section introduces Petrov Group's analog market segmentation model that takes into account the emerging analog integration trends and exposes the actual analog market size and growth.

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