This is surely what current entertainment giants prefer. But weaker intellectual property laws that, for example, allowed one company to make game cartridges for another's console, created what is widely regarded as the fastest growing sector of the entertainment industry today. These insights, together with Mailland's readable style, makes me likely to assign the book to my future video game law students.

—Betsy Rosenblatt, *Case Western Reserve University, Cleveland, OH*

Intellivision: How a Videogame System Battled Atari and Almost Bankrupted Barbie

Tom Boellstorff and Braxton Soderman
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Tom Boellstorff and Braxton Soderman's *Intellivision: How A Videogame System Battled Atari and Almost Bankrupted Barbie* is a narrative—it presents the story of the Intellivision (and Mattel Electronics more broadly) in meticulous detail. More importantly, *Intellivision* is a necessary antidote to the Atari-centric discourse that previously dictated the history of the second generation of video games. *Intellivision* follows a temporal structure, beginning with the history of Mattel toys before exploring the rise (and fall) of Mattel Electronics. Although each chapter covers a topic rather than a time period, their order preserves the narrative structure of

the book. For example, the early chapter on toy design as "platform development" informs five later chapters on Intellivision's various peripheral components, which in turn explain the overextension of resources that opens the book's final chapter.

As storytellers, Boellstorff and Soderman use three types of data. First, they document historical media: newspaper and magazine articles, print advertisements, television commercials, and trade publications. Second, they present archival data in the form of documents internal to Mattel Electronics during Intellivision's development and lifespan. These archival materials include internal memos, unreleased games, training manuals, sample code, and notes between staff. Third, they conducted 150 interviews with former employees of Mattel Electronics and related companies. The interviews form the heart of the data, filling the prose with nuance and personality. Boellstorff and Soderman's text seamlessly flows between these three datasets to document the inner workings of Mattel Electronics as a social space and Intellivision as a piece of hardware.

The central strength of this book is the amount and quality of the data. Every assertion that Boellstorff and Soderman make about the working life of Intellivision's engineers or the practice of game development is supported by multiple quotes from interviewees and notes or memos from the archives. Highlighting Intellivision as a platform, certain topics are given particular importance, such as the Standard Television Interface Chip (STIC) and the EXEC (a partial operating system). *Intellivision* is written so that anyone with a basic understanding of the different components of a computer (e.g.,

a conceptual but not technical understanding) should recognize not only the utility of the STIC and EXEC, but also why clever game designers would endeavor to bypass them using code. Other highlighted topics include Intellivision's rivalry with Atari (enacted through advertising and technology), the differences in opinion for the direction of the company between David Chandler and Richard Chang, the practice of recruiting engineers from aerospace, the importance of peripherals to the goal of Intellivision becoming a full-fledged computer, and the business relationship with Mattel toys.

Boellstorff and Soderman's book is particularly useful for researchers and educators whose work focuses on video game history from cultural and artistic perspectives. *Intellivision* provides ample evidence for two concepts that I regularly teach in my own video games classes—that innovation in game design is often the outcome of developers creatively dealing with the limitations of the technology and that the economics of the industry influence game design. *Intellivision*'s narrative is comprehensive and goes well beyond these two aspects by documenting how Mattel 's history led to the modular design of electronics, which informed the Intellivision's construction, in turn determining how games could be programmed for the console, thus ultimately ending with game developers innovatively working around the system's constraints. For example, third-party developer Cheshire decided not to use the EXEC because it was propriety code, even though it was present in the console and made games more stable. While this decision was partially made for legal purposes, the outcome affected gameplay. Since the EXEC only queried the controller for input twenty times per second and a game's code could query the controller sixty times per second when not using the EXEC, Cheshire's games were more responsive than many in Mattel's own catalog. *Intellivision* contains many such vignettes.

Intellivision is a well-documented history with two minor caveats. First, it is noticeably light on theory. This is not necessarily a problem considering the focus of the book; the story of Mattel Electronics does not need a consistent theoretical throughline. There are a couple nods to theory, such as the occasional mention of gender disparity and technomasculinity. The most consistently salient concept is that of "affordance zones"—niches where, by design or luck, the technology allows for innovations to occur. But even affordance zones are not a ubiquitous theme. The second minor issue is that the chapter on the fall of Mattel Electronics is not as well documented as those that explore software and hardware development. When covering this topic, the book details Mattel's overextension—the extent to which it simply expanded too fast, hired too many people, and initiated too many competing projects. But comparatively little time is spent documenting the executive-level decision-making processes that greenlit that rapid growth. This is in stark contrast to the preceding chapters where every decision, from the largest to the smallest, feels supported by copious, nuanced data from multiple sources.

Intellivision is a valuable resource for anyone teaching or researching the second generation of video games. As a part of the Platform Studies book series, it delivers on

the promise of demonstrating, in textured detail, the aspects of Intellivision that distinguish it from its contemporaries. The book provides a well-documented history of Mattel Electronics—one that makes both the technologies and business decisions accessible for people outside of those disciplines. The explorations of the Intellivision's inner workings, the practices of Mattel's game designers, and the attempted strategies for using the console as a way to get computers into the American household are important contributions that speak to the wider video games literature. Boellstorff and Soderman's *Intellivision* is particularly adept at demonstrating how technological and economic constraints influence game design and, by extension, game play.

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