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App Imperialism: The Political Economy of the Canadian App Store

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Abstract

To critically engage with the political economy of platformization, this article builds on the concepts of platform capitalism and platform imperialism to situate platforms within wider historical, economic, and spatial trajectories. To investigate if platformization leads to the geographical redistribution of capital and power, we draw on the Canadian instance of Apple's iOS App Store as a case study. App stores are situated in a complex ecosystem of markets, infrastructures, and governance models that the disparate fields of business studies, critical political economy of communications, and platform studies have begun to catalog. Through a combination of financial and institutional analysis, we ask if Canadian game app developers are effective in generating revenue within their own national App Store. Given Canada's vibrant game industry one would expect Canadian developers to have a sizable economic footprint in the burgeoning app economy. Our results, however, point toward the US digital dominance and, therefore, we suggest the notion of app imperialism to signal the continuation, if not reinforcement of existing instances of economic inequalities and imperialism.

Keywords

political economy, app store, platformization, game industry, financial analysis

In the broader process theorized as the “platformization of cultural production,” the game industry has followed a different historical trajectory compared to either incumbent “platform independent” industries (e.g., journalism, film, and television), or emergent, digital-native modes of production, such as live-streaming and podcasting (Nieborg & Poell, 2018). Since the launch of the first dedicated game consoles in the 1970s, digital games have been “platform dependent” as they are intrinsically tied to hardware devices that include dedicated consoles, handheld devices, and desktop computers. As such, they serve as a useful case study to explore the political economy of platform markets. Over the course of three decades, the game industry has demonstrated relentless economic growth and served as a beacon of technological innovation. Yet, while catering to hundreds of millions of players across continents, in an economic sense the game industry has never been truly a global affair (Kerr, 2017). Demand for games is not evenly global with billions of players unable to afford expensive game hardware or software, nor is supply, with a handful of regions being responsible for the majority of game (software) development (Dyer-Witford & De Peuter, 2009; Johns, 2006). While games may have global potential, production, and consumption are unevenly distributed across countries and regions.

Platformization deeply impacts the game industry, which witnessed a significant shift in markets, governance frameworks, and infrastructure similar to other segments of the cultural industries. Particularly, the broad diffusion of mobile media, largely powered by Google and Apple's mobile operating systems, combined with the connective and advertising services provided by Facebook, led to a massive increase in demand. Partly spurred by the supposed “democratization” of game production tools (Foxman, 2019; Nicoll & Keogh, 2019), the supply of game software increased rapidly as well. In early 2019, the global market for mobile game apps is estimated to be over US\$50 billion as half a billion smartphones are sold annually to users worldwide (Statista, 2019). This broader and more international market raises the question of whether for-profit game production has become more geographically diverse as well. If the demand for mobile game apps is increasing,

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diversifying, and becoming more international, does this mean that new industry entrants are able to upend industry incumbents? If so, what would be the political economic implications for the industry at large? One reason why game developers, regardless of their location, should be able to appeal to global audiences is because games can be designed to be relatively culturally agnostic, particularly compared to language-based cultural commodities such as news, literature, and television. Games convey meaning by engaging with rules that can be detached from cultural signifiers exclusive to the region where the game is developed; it would be hard to discern why the gameplay of mobile hits such as *Fruit Ninja*, *Angry Birds*, or *Flappy Bird* is distinctively Australian, Finnish, or Vietnamese.

In this article, we are particularly interested in if and how internationally operating platforms impact national game industries. Do platforms and the app stores they operate present a more level economic playing field for developers from a variety of regions? Or do they reify the unequal global distribution of capital? If the latter is true, this should concern all those who are concerned about economic sustainability and cultural diversity. The geographical diversity of “creators” in the “social media industries” (Cunningham & Craig, 2019), or the sizable investments by Netflix in local audiovisual productions (Lobato, 2019), may suggest that global flows of capital have *reversed* (from South-to-North and East-to-West to North-to-South and West-to-East), or at least simplified by shifting political hegemonies rather than specific imperialist nation-states (Suwandi, 2019). While YouTube and Netflix may indeed have a positive impact on local and regional industries that once had to fight much harder to compete against Hollywood, “transnational platform companies tend to set global, rather than local, standards regarding content” (Nieborg & Poell, 2018, p. 4285). A centralized mode of platform governance is not only visible on Facebook and YouTube (Gorwa, 2019), but also in the very strict control over the distribution of mobile apps (Gillespie, 2018). Their supply is regulated by app stores, which have come to function as crucial “infrastructural platform services” (Van Dijck et al., 2019). In this article, we focus on Apple’s iOS App Store, which together with Google’s Play Store, is one of the two dominant US-owned app store operators.¹

To investigate if platformization leads to the geographical redistribution of capital and power in the game industry, we provide a financial analysis of game app-related revenue generated in the Canadian instance of the App Store.² We wonder whether Canadian game developers—traditionally considered to be on the periphery of the traditional industrial “core” (i.e., Japan, the United States, France, and the United Kingdom)—are able to compete with industry incumbents in their own market. We focus on Canada as it has traditionally held a complex cultural and economic bond with the United States—the country that is economically dominant in both the platform economy and the game industry. This bond has

been criticized extensively by Canadian political economists (Smythe, 1981). Canada’s geographic proximity to the United States resulted in decades of Canadian cultural policy as well as federal and provincial support aimed at mitigating the United States’ economic and cultural impact on Canadian industry and consumers (Edwardson, 2008; Tepperman, 2017). A second reason to single out Canada is the size and rich history of its national game industry (Consalvo, 2013). In 2018, Canada directly employed over 21,000 workers, thereby, ranking second in employment (after the United States) in the West. Given these circumstances, one might expect Canadian-made game apps to dominate their own domestic market.

Before introducing the Canadian game industry and our methodological approach to app store analysis, we will first explore the broader economic context in which app stores are situated, followed by the introduction of two critical interventions from the field of critical political economy: “platform capitalism” (Srnicke, 2017) and “platform imperialism” (Jin, 2015). These interventions suggest that platforms augment imperialism and subvert national sovereignty. Building on this work, we suggest the notion of *app imperialism* to highlight the role of app stores in both projects.

App Stores as Multisided Markets

Despite the ubiquity of app stores, scholarship on them has been slow to emerge in the fields of media and communication studies. For example, in an article reflective of studies on mobile media, Leyla Dogruel et al. (2015) observe that app research predominantly discusses app usage, reasons for usage, and privacy. If mobile app stores are mentioned, they are understood as generic marketplaces with uniform interfaces and pricing mechanisms. In this article, we complicate this perspective by considering how app stores function as infrastructural platform services. Here, we follow the recent work on app studies by Michael Dieter et al. (2019), who argue that “each app store comes with its own affordances, built-in logics, and mechanisms” (p. 3), each giving way to “distinct regional infrastructural arrangements” (p. 12). As such, app stores are situated in a complex ecosystem of markets, infrastructures, and governance models that the disparate fields of business studies, critical political economy of communications, and platform studies have begun to catalog (Nieborg & Poell, 2018). Before taking a critical political economic perspective on app stores, we first consider app stores as multi-sided markets.

Every day, several hundred new game applications are released through the App Store. Access to affordable game development tools has allowed for much smaller projects, more experimental game design, and, thus, a break with the historically blockbuster-driven segments of the game industry (Foxman, 2019; Keogh, 2019). The proliferation of “indie” game studios, consisting of small teams who tend to self-publish original intellectual property (IP), can be seen as

evidence of developers' ability to adapt to new business models, distribution platforms, and audiences (Parker & Jenson, 2017). As we will discuss more in-depth below, the Canadian game industry indeed underwent such a transformation, sporting a vibrant mix of indie studios and incumbent publishers (Consalvo, 2013). These are located in both traditional "media capitals"—Vancouver and Toronto—as well as emerging game development communities in Canada's Atlantic provinces (Pottie-Sherman & Lynch, 2019). At the same time, the accessibility of new markets and distribution platforms translates into increased competition. For game developers looking for sustainable revenue streams, app stores have become both a blessing and a curse as the app economy is highly stratified and, therefore, fraught with uncertainty. Despite billions of dollars in worldwide revenue, economic analysis shows that the distribution of app downloads, revenue, and ultimately profit, is highly uneven (Bresnahan et al., 2015).

Scholarship in business studies offers a starting point to account for the economic challenges faced by game app developers. This body of work, rooted in orthodox (mainstream) economics and strategic management, is primarily concerned with questions pertaining to platform management strategies, network economics, and pricing (McIntyre & Srinivasan, 2017). The main unit of analysis is the platform operator, who facilitates transactions between two (or more) "sides" in a market, for example among end-users (i.e., players), app developers, advertisers, and other institutional actors. Historically, Sony, Microsoft, and Nintendo operated prototypical "two-sided markets," bringing together players and publishers (Rochet & Tirole, 2003). Platform operators largely settled on a fairly stable business model that was predicated on selling premium-priced titles. This market design incentivized platform operators to build a relatively small, high-quality catalog of available titles. Though not without financial risks, this model has been quite lucrative since the 1970s, both for the aforementioned trio of console manufacturers, as well as for several dozen transnational game publishers (Kerr, 2017). Then again, this business model had built-in limitations. On a global level, console gaming has been, and still is, only accessible to a small percentage of affluent consumers. This relative inaccessibility, in turn, did little to break down the "cultural bottlenecks" associated with the exclusionary communities of game enthusiasts surrounding console and PC gaming platforms (Keogh, 2019).

The advent of mobile app stores shattered this cultural and market equilibrium by upending the dominant position of game publishers in platform markets and affording new pricing models. As the operators of a *de facto* duopoly (in the West), Google and Apple automatically capture 30% of all app store related revenue. Contrary to dedicated game device manufacturers, for both platform operators the licensing fees from premium-priced software do not constitute their primary revenue stream. Apple's revenue is primarily derived

from premium-priced hardware, whereas the majority of Google's income stems from advertising. Moreover, unlike dedicated game hardware, mobile devices are multi-purpose platforms with games rivaling for attention with connectivity or utility apps. This diversity instantly diminished the bargaining power of individual game developers, who are now "just" one of the many tens of thousands of app developers.

Next to this positional shift, the App Store and Play Store deviated from decades of pricing orthodoxy by switching out the game industry's dominant premium and subscription business models for the freemium model, in which payments are optional. For Google and Apple, there is an economic incentive to provide cheap, if not free apps to consumers. Around 2010, premium-priced game apps quickly coalesced around the US\$0.99 price tag, after which premium pricing strategies were almost completely abandoned. Today, nearly all game apps have adopted the "freemium" or "free-to-play" business model, in which revenue is either derived from "in-app-purchases," advertising, or a mix thereof (Nieborg, 2015). The freemium business model favors economies of scale. Generating significant revenue necessitates the aggregation of sizable numbers of players as the average advertising income per user is infinitesimally small and only a small minority of players tends to pay for in-app content.

Platform Capitalism and Imperialism

The competitive dynamics in platform markets presents a number of challenges for app developers, particularly new market entrants. As the dominant focus in business studies is the platform operator, the scale of these challenges for individual game studios, let alone how geographical factors play into them, is largely unknown. Put differently, we lack insight into the particulars of economic sustainability or geographical diversity.

The above gaps and concerns feed broadly into the research program of the critical political economy of communication, which provides a rich body of scholarship studying and critiquing the concentration of corporate ownership (Mosco, 2009). Examples of this "institutional" perspective are analyses that consider the operation of integrated, transnational media and entertainment conglomerates, such as The Disney Company and Time Warner (Birkinbine et al., 2016). Having an explicit empirical dimension, institutional studies draw on financial and corporate documentation to investigate corporate structures (integration, business divisions), acquisitions, a company's history, political profiles of key executives and board members, and worker-related labor issues (Corrigan, 2018; Mirrlees, 2013). The international impact of ongoing trend toward corporate consolidation, Dwayne Winseck (2008) argues, is hard to ignore: "Even some media economists who do not usually take a critical stance, see empire-building, finance and personal hubris as having become driving forces behind the consolidation of media markets, alongside traditional concerns with profits"

(p. 41). In platform markets, the dynamic of corporate concentration, inequity, and disproportionality—particularly, its democratic and political impact—have become even more urgent. Even among business scholars, there is broad consensus that the combination of network effects, pricing strategies, and high switching costs for users inevitably create “winner-take-all” economies (Barwise & Watkins, 2018). To critically engage with the political economy of platformization, we build on the concepts of platform capitalism and platform imperialism to situate platforms within wider historical, economic, and spatial trajectories.

Using a Marxian framework and being attentive to the aforementioned conceptual advancements in business studies, Nick Srnicek (2017) identifies the following four macroeconomic tendencies constituting “platform capitalism”: (1) the expansion of extraction (the intensification of data mining, sold to advertisers, and data-intermediaries for-profit), (2) platform companies positioning themselves as gatekeepers (gaining control over vital exchange points for capital and labor), (3) a convergence of markets (pointing to the infrastructural ambitions of platform companies), and (4) the enclosure of ecosystems (putting users into walled, fully controlled “gardens”). App stores are textbook examples of the capitalist tendencies outlined by Srnicek. Apple’s iOS operating system not only forces end-users to download apps through the App Store, it follows a clear lock-in strategy. By adopting this “walled garden” strategy, Apple prevents end-users from taking their software (i.e., apps) from one app store to another. App developers, however, are given great leeway in collecting data from end-users, be it personal data or information from usage sessions. In the case of free-to-play apps, data extraction is at the core of its business model (Nieborg, 2017). Most, if not all, freemium developers collect, analyze, store, and share vast amounts of user data to “optimize” gameplay, or to increase player “engagement” and “retention” by building intricate data profiles. In terms of gatekeeping, Apple is particularly known for its strict app store policies, arbitrarily rejecting games deemed “controversial” (Gillespie, 2018).

Taking on the question of the US dominance in platform markets, Canadian political economist, Jin (2015), places platform capitalism within a wider system of economic and cultural imperialism. His work is in dialog with, and updates, Lenin’s (1987) argument in *Imperialism: The Highest Stage of Capitalism*, wherein he argued that imperialism is intertwined with “monopoly capitalism,” driven by the unity of industrial and finance capital to export capital to new, expanding markets in the colonial and imperial periphery. During the Cold War, this theory was taken up in critical media studies and served as the jumping off point for a renewed focus on the dominance of the US-based cultural industries (Mosco, 2009; Schiller, 1991). Taking on criticisms from within political economy and media studies that nation-states are no longer the prime driver of capital’s expansion, Jin argues that the nation state remains pivotal to

the current geopolitical world order. Platforms, then, emerged as playing a decisive role in the global media, information and communication industries, as a “few Western countries, in particular the US, have dominated not only the development of platform technologies but also the global penetration of these new technologies” (Jin, 2015, p. 16). Theorized by Greene and Joseph (2015) as a “digital spatial fix,” platform companies and the app stores they operate have become the key infrastructural projects exemplifying this long-standing imperialist dynamic, intensifying and expanding the reach of the US imperialism into digital spaces.

Cultural Policy Meets App Imperialism

Imperialism is as much about national sovereignty and unidirectional flows of culture, as it is about how finance capital is able to appropriate capital from national economies to the ledgers of its investors. Political economic scholarship has been at the forefront of documenting the effects of the US imperialism on local and national cultural industries (Mirrlees, 2013, 2019; Schiller, 1991). For example, in the film industry, despite the purported globalization of culture after the end of the Cold War and the subsequent rise of the internet, the United States has continued to overwhelmingly dominate the flow of capital and culture (Crane, 2014). In the games industry, this dynamic has been visible as well, as development studios outside the United States, the United Kingdom, France, and Japan saw most of their revenues cross borders to global publishers based in said core countries (Dyer-Witheford & De Peuter, 2009; Johns, 2006).

Surveying the Canadian game app economy provides an opportunity to explore how platform monopolies impact national cultures of production. As argued by Aphra Kerr (2017), “While the digital games industry is extending its reach geographically, we need to empirically examine the degree to which it is a global industry” (p. 29). Despite obvious worries about the economic sustainability of app development, little is known about the exact economic circumstances of national developer communities.

What, then, are Canada’s circumstances? On the one hand, Canada holds a privileged position. It is the United States’ largest trading partner, which resulted in a number of free-trade deals: The North America Free Trade Agreement (NAFTA) and its purported successor, the Canada-United States-Mexico Agreement (CUSMA), primarily benefiting Canadian capitalists and investors. This “special” economic bond resulted in contradictions at the level of culture, leading the Canadian state to pursue policy interventions in the service of a perceived Canadian identity by way of protecting and encouraging Canadian cultural production (Parker & Jenson, 2017; Tepperman, 2017). In the music industry, for example, the Canadian Radio-television and Telecommunications Commission’s “MAPL” (Music, Artist, Performance, Lyrics) categorization defines the Canadianness of music along four very specific lines. As stipulated by the music (M) category, to

be entitled to protected airtime music is to be composed entirely by a Canadian citizen, permanent resident, or a person living in Canada for 6 months preceding a recording (Canadian Radio-Television and Telecommunications Commission, 2009). While the MAPL system takes geography and citizenship into account it ignores corporate ownership, leaving this approach ripe for abuse by national conglomerates and foreign investments.

This interventionist approach has since given way to a set of neoliberal policy prescriptions that emphasize domestic economic growth over sovereignty, leading, ironically, to an increased dependency on foreign capital. More recently, Canada's cultural policy has been aligned with the concept of the "creative industries" in which Canadian cultural production is to be oriented toward global marketplaces such as platforms and app stores. In 2017, the Liberal government launched the "Creative Canada" policy framework, which leans on Canadian national identity to paper over market-driven, export-driven, and "cultural industrialist" policy prescriptions, rather than artistic production in "market failure" activities (Davis & Zboralska, 2019).

Research on individual sectors of the Canadian cultural industries highlight the tensions between federal policy interventions and individual firms trying to navigate platform capitalism and imperialism. For example, Zboralska and Davis (2017) found that existing cultural policies are being "sidelined by a consumerist approach that gives free rein to streamed services" (p. 4). Meaning, whereas Canadian broadcasting is heavily regulated through initiatives including the MAPL system, Netflix has been able to evade regulatory efforts such as targeted taxation, content quota, or discoverability requirements (Lobato, 2019).

The Canadian game industry occupies a similar position as Netflix in its ability to avoid direct regulation while benefiting from a variety of cultural and industrial policy schemes, mostly in the form of tax subsidies and grants (Joseph, 2013; Parker & Jenson, 2017). In the United Kingdom and Canada, more so than indie outfits, large transnational game publishers have taken great advantage of various tax relief schemes aimed at boosting regional employment (Pottie-Sherman & Lynch, 2019; Woodcock, 2019). Instead of highlighting cultural contributions, industry organizations tend to play into the "innovation perspective" pervasive in policy circles (Sotamaa et al., 2019), by highlighting the positive impact on GDP and games being an export product. According to the Entertainment Software Association of Canada (2017), the digital games industry added 40,600 jobs and a total of Can\$3.7 billion to the Canadian economy. The same report also notes that 86% of employment is in foreign-owned companies. As we argued elsewhere, foreign ownership not only leads to a loss in tax revenue—revenues are either recycled as losses in-country or offshored as profits to parent companies—but also to more precarious work conditions (Nieborg et al., 2019).

In what follows, we situate app imperialism in this specific Canadian context of the US dependency, ambivalence, and, at times, proactive policy intervention. App stores are, as of yet, fairly unregulated. Financial analysis by Bresnahan et al. (2015) shows that while Apple and Google's app stores have dramatically lowered the costs of market entry, they do a very poor job matching "consumers to the overwhelming product offerings" (p. 241), subsequently raising the marketing costs for new entrants, favoring well-capitalized, established firms as a result. While both platform operators could feasibly design their app stores to favor algorithmic recommendations and curatorial practices promoting greater regional diversity, or content diversity in general, they have shown very little appetite or willingness to structurally tackle this issue.

Analyzing the App Economy

There is no question that digital game developers and publishers in Canada are successful in generating revenue, which we measure as the ability to derive income through the sale of apps or in-app content. There are almost 800 active studios in prolific communities across the country, which compared to other countries, is high (Pottie-Sherman & Lynch, 2019). Economic activity, however, says little about potential imperialist effects on a domestic market. Instead, revenue generation serves as a starting point for a broader investigation that includes *revenue capture*, which we define as the ability of a parent firm to collect economic rents, either directly from a local or regional subsidiary through corporate ownership, or indirectly from a third party through licensing IP.

The Canadian game industry is largely made up of two kinds of studios: small independent ("indie") producers and medium to large incumbents (Consalvo, 2013). These studios are arranged across the country in a "hub/margin" type fashion, with large studios cropping up in Montréal, Quebec City, Toronto, Vancouver, Edmonton, and more recently Winnipeg and Canada's Atlantic region (Parker & Jenson, 2017; Pottie-Sherman & Lynch, 2019). The larger studio clusters tend to create small agglomerations of indie studios around them (Joseph, 2013). These indie studios either create their own IP, competing internationally through the app stores, or take on contracts from larger publishers. Similar to other regional clusters across the globe, this setup has created a dynamic where successful indie studios are acquired by larger studios looking to recruit a skilled workforce or incorporate new IP into their portfolio. In this environment, the Canadian industry has grown to rank among the top-five internationally, in terms of workforce and production output. Given these economic indicators, one would expect Canada to have a sizable financial footprint in the emerging global app economy. Yet, the industry has a long history of foreign dependency; incumbent publishers—the largest employers of Canadian game workers—are all principally owned by

firms based in the United States, Japan, and the European Union (Johns, 2006). Thus, while Canadian game developers are able to create significant revenue, it is very much the question whether they are able to capture this revenue.

To answer this question, we conducted a combination of financial and institutional analysis. Unlike their neoclassical colleagues, political economists tend to be rather implicit about their research methods (Corrigan, 2018). First, we address this gap by demonstrating how financial analysis can be used to explore the political economy of platformization. We acquired a unique longitudinal financial dataset, furnished by the New York City-based market research company SuperData Research. It includes daily, title-level revenue (in US dollars) for game apps listed in the Canadian App Store from 2015–2017.³ A caveat here is that these revenue figures concern *direct* revenue, or income generated by developers either through the sale of premium apps or through in-app purchases, such as extra content, virtual currency, or items. As such, we do not account for *indirect* app revenue, primarily generated through advertising. Because advertising income is paid directly to app developers (i.e., not routed through the app store), there is no equivalent title-level dataset for advertising income. Therefore, while we state absolute revenue numbers in our analysis, these figures gesture toward broader trends. From this wide-ranging dataset, we culled a snapshot, aggregating an annual top-100 for each of the 3 years. Pointing toward the high degree of skew in revenue distribution, out of the tens of thousands of game apps, the top-100 represents approximately 85% of total direct revenue.

Second, following political economic scholarship on corporate concentration, we engaged in institutional analysis. Deviating from how Canadianness is defined by federal policy makers, such as in the MAPL system, we use three levels of corporate ownership to analyze if games are Canadian. First, the game has to be made in Canada, primarily by a company located in Canada. Second, we follow Jin (2015) by including IP in our analysis. Therefore, our second measure is if IP is primarily owned by a Canadian creator, publisher, or company. And third, the studio has to be primarily owned by a Canadian parent company, such as a game publisher. These three levels aim to reveal the current state of Canadian app development. Then, we used these three levels as a framework to qualitatively code our three annual top lists for app-level geographical diversity and ownership based on the following: (1) the “listed developer” or publisher in the Canadian App Store, its country of origin, and its number of released app titles; (2) the “actual developer,” its country and city of origin; (3) the parent-organization of the actual developer and its country of origin; and (4) the game title’s release date. We included the actual developer category as there tends to be a discrepancy between studios as they appear in the App Store listing (i.e., on a game’s profile) and the studio that veritably developed said title.

Throughout the coding of our dataset, we followed Corrigan’s (2018) suggestion to “burrow down” (p. 2757) into our empirical material. That is, to verify the information offered in the four categories outlined earlier, company information was gleaned from Canadian App Store pages, developer and publisher websites, social media, LinkedIn, news sources, and government company registries. Unique Identifiers, a unique numeric string assigned to individual titles by Apple, allowed us to verify accuracy from year to year, as well as to track acquisitions, which can then be used to reveal economic and financial shifts across the game app economy. By using Unique Identifiers, we leveraged the “research affordances” native to the App Store (Dieter et al., 2019), which provides a much higher level of data transparency compared to the relatively closed environments of dedicated game consoles.

America First! Canada Last?

Reviewing the annual lists of top-performing apps, there are two economic trends that become immediately apparent: growth and entrenchment. From 2015–2017, the top-100 of game apps ranked in approximately, US\$140, US\$156, and US\$166 million in revenue. This growth pattern coincides with the long-term staying power of a handful of titles. Notably, studios (and their subsidiaries), such as Supercell, King Mobile, Playtika, and Machine Zone dominate the annual top-10 lists (see Table 1). Electronic Arts, founded in 1982, is the only studio in the top-10 with incumbent roots. Launched in 2015, *Star Wars: Galaxy of Heroes* entered the top-10 in 2017, using the well-known *Star Wars* IP owned by The Walt Disney Company.

If anything, the top-ranked titles show remarkable persistence considering that games such as *Clash of Clans* and *Candy Crush Saga* were launched in 2012. One of the reasons for the continued success of this group of killer apps could be the blockbuster dynamic that has been a hallmark of game publishing for decades. Mobile hits are similar to long-running game franchises, such as *World of Warcraft* and *Call of Duty*, as they are examples of heavily advertised, multiplayer games that leverage direct network effects (i.e., players who want to play with others). In addition, once a game achieves “hit” status, the App Store’s online ranking systems provide a positive feedback loop ensuring continued exposure to potential new players through the App Store’s top lists.

As we move down the list of top-100 developers, there is a continual familiarity in studio and title names with only a combined 27 studios new to the 2016 and 2017 top-100 lists. The lists show that despite the broader industry trend allowing for “informal videogame development practices” (Keogh, 2019), incorporated studios engaging in formalized modes of production reign supreme. The majority of titles represents either new games by subsidiary studios, such as Machine Zone’s *Mobile Strike* developed by its Epic War division, or games published by legacy game companies breaking into the

Table 1. Top-10 publishers by year in the Canadian App Store.

Rank	2015		2016		2017	
	Title	Developer	Title	Developer	Title	Developer
1	Clash of Clans	Supercell	Mobile Strike	Machine Zone	Clash Royale	Supercell
2	Game of War	Machine Zone	Game of War	Machine Zone	Candy Crush Saga	King Mobile
3	Boom Beach	Supercell	Clash Royale	Supercell	Clash of Clans	Supercell
4	Candy Crush Saga	King Mobile	Clash of Clans	Supercell	Game of War	Machine Zone
5	Candy Crush Soda Saga	King Mobile	Candy Crush Saga	King Mobile	Pokémon GO	Niantic
6	Slotomania Casino	Playtika	Pokémon GO	Niantic	Mobile Strike	Machine Zone
7	Hay Day	Supercell	Slotomania Casino	Playtika	Slotomania Casino	Playtika
8	Marvel Contest of Champions	Kabam	Marvel Contest of Champions	Kabam	Lords Mobile	IGG
9	Big Fish Casino	Big Fish	Candy Crush Soda Saga	King Mobile	Candy Crush Soda Saga	King Mobile
10	DoubleDown Casino	DoubleDown	Boom Beach	Supercell	Star Wars: Galaxy of Heroes	Electronic Arts

Table 2. Revenue generation by nation-states by year in the App Store top-100.

Country	2015		2016		2017	
	Titles	Revenue	Titles	Revenue	Titles	Revenue
The United States	49	US\$50.3	43	US\$68.9	35	US\$59.7
Finland	4	US\$35.3	7	US\$34.2	7	US\$30.8
The United Kingdom	5	US\$10.2	6	US\$9	8	US\$12.1
Japan	4	US\$1.2	6	US\$2.8	8	US\$9.8
Israel	5	US\$8.1	5	US\$10.5	5	US\$9.5
China	3	US\$3.6	7	US\$6.1	7	US\$7.6
Russia	0	US\$0	3	US\$0.9	5	US\$3.7
South Korea	2	US\$3.2	2	US\$3.6	3	US\$3.2
Canada	3	US\$5.6	3	US\$1.8	3	US\$0.9
Australia	2	US\$1.2	1	US\$0.9	1	US\$0.5

mobile industry with pre-existing IPs, for example Nintendo's *Super Mario Run* entering as number 49 in 2016. We also see consistent growth by established studios releasing new titles that occasionally skyrocket into the top-10, such as Supercell's *Clash Royale* in 2016. We would argue that the initial successes of an early wave of newcomers, such as Supercell founded in 2010, obscure how difficult it became to break into the top-100 by 2015. In less than a decade, the app economy has become an entrenched market dominated by established IPs, studios, and publishers.

Perhaps unsurprisingly, app store incumbency translates into geographical dominance, particularly by Silicon Valley-based companies (see Table 2). In 2015, 49 titles were created by the US developers, with 36 of those in California and 25 located across the Silicon Valley Region. However, as we move into 2016 and 2017, there is a continued drop in the US-based development. There are a few incumbent studios, notably ones based in Russia, which emerged with 3 and 5 titles in 2016 and 2017, respectively. Revenue generated by studios in China, Finland, Japan, and the United Kingdom increased by 10 titles

Table 3. Revenue capture by nation-states by year in the App Store top-100.

Country	2015		2016		2017	
	%	Revenue	%	Revenue	%	Revenue
United States	44	US\$62.3	52	US\$81.7	45	US\$73.9
China	4	US\$6.1	35	US\$54.3	34	US\$57
Japan	27	US\$37.3	3	US\$3.9	6	US\$9.9
South Korea	2	US\$3.2	2	US\$3.6	4	US\$6.2
Russia	0	US\$0	0.5	US\$0.9	2	US\$3.7
Australia	0.2	US\$0.4	0.3	US\$0.6	2	US\$3.7
United Kingdom	14	US\$20.5	0	US\$0	1	US\$2.4
Finland	0	US\$0	0.3	US\$0.6	0.2	US\$0.4
Canada	0.8	US\$1.2	0.3	US\$0.5	0.1	US\$0.3
Israel	0.2	US\$0.3	1	US\$1.8	0	US\$0

in 2016, followed by another 4 in 2017. These collective successes can be seen as further proof that games designed to be culturally agnostic and emerging from smaller countries, such as Finland and Israel, can distribute far beyond their respective domestic markets. Despite the decrease in the US titles, revenue generation increased from 2015–2017, suggesting that the US market dominance is entrenched but not guaranteed. Throughout these years, Canada's footprint in its own App Store is paltry, demonstrating a steady level of decline.

The US revenue generation may have stalled somewhat, though this is offset by maintaining high levels of revenue capture, either through acquisitions of non-US developer studios or of IPs. From 2015–2017, the United States consistently captured around 44%, 52%, and 45%, respectively, of total direct revenue in the top-100 titles (see Table 3). In particular, the February 2016 acquisition of King—known for the *Candy Crush* franchise—by the California-based game publisher Activision Blizzard, translated into a sharp increase in the US revenue capture. Lacking significant revenue generation or the presence of incumbent publishers, Canada's ability to capture revenue decreased to 0.1% in 2017.

Table 4. Top-10 revenue capture by parent-organizations.

Rank	2015		2016		2017	
	Revenue	Parent	Revenue	Parent	Revenue	Parent
1	US\$33.5	SoftBank Group	US\$34.3	Tencent	US\$31.6	Tencent
2	US\$20.4	King Mobile	US\$27.9	Machine Zone	US\$21	Machine Zone
3	US\$14	Machine Zone	US\$17.6	Activision Blizzard	US\$20.6	Activision Blizzard
4	US\$9.3	Caesars Entertainment	US\$8.5	Chinese Consortium	US\$10	Chinese Consortium
5	US\$7.3	Electronic Arts	US\$8.1	Electronic Arts	US\$9.3	Niantic
6	US\$5.6	Kabam	US\$6.7	Niantic	US\$6.4	Electronic Arts
7	US\$5.1	Churchill Downs	US\$5	Gaea Mobile	US\$5.2	IGG
8	US\$3.7	IGT	US\$3.6	IGT	US\$4.3	Nintendo
9	US\$2.9	Tencent	US\$3.5	Churchill Downs	US\$3.7	Aristocrat Leisure
10	US\$2.8	Gamevil	US\$3.3	Gamevil	US\$3.5	DoubleUGAMES

Table 5. Canadian titles in the top-100 (2015–2017).

Title	Developer	Parent	Country	IP
The Simpsons: Tapped Out	Blight Games	Electronic Arts	The United States	The United States
Kim Kardashian: Hollywood	Blammo Games	Glu Mobile	The United States	The United States
Jurassic World: The Game	Ludia	Ludia	Canada	The United States
Trailer Park Boys: Greasy Money	East Side Games	East Side Games	Canada	Canada
Bud Farm: Grass Roots	LRDLY	LRDLY	Canada	Canada

Comparing revenue creation and capture in Tables 2 and 3, two countries stand out: Finland and China. The former's financial success in the mobile segment is remarkable for a small country of 5.5 million. Finland is similar to Canada in the sense that both have a vibrant game industry—employing thousands—and interventionist cultural policies. As the revenue figures in Table 2 make clear, both countries differ when it comes to revenue generation, with the Fins coming in second after the United States and Canada falling far behind. This could be explained by the differences in cultural policy as Finnish state-funding bodies have shown a “willingness to support domestic companies on the global market” (Sotamaa et al., 2019, p. 11), instead of only offering tax breaks to transnational incumbents. Then again, Table 3 also shows the persistent lack of revenue captured by Finnish studios and the inability, or unwillingness, of policy makers to resist the lure of foreign capital.

This brings us to one of the biggest sources of foreign capital, China, which seemingly out of the blue has become a dominant global actor in game apps. From 2015–2017, China went from a respectable fourth place in revenue capture to a dominant second place, tight on the heels of the United States. The main cause for this transition is a number of strategic acquisitions of studios and publishers based in Japan, Finland, and Israel, primarily by Tencent Holdings. One of Tencent's most notable acquisitions was the 2016 purchase of the Finnish studio Supercell, which allowed Tencent to switch places with the Japan-based conglomerate SoftBank (see Table 4). As argued by Cheung and Fung (2016), after

benefiting from decades of protectionist measures, Chinese media and game companies started leveraging finance capital as a potent instrument to rapidly gain a dominant share in the global market for online games. Interestingly, whereas US companies acquired or invested in Canadian companies, Chinese companies also obtained studios in emerging game industries, such as Finland and Israel. Tencent's global expansion is part of a much broader trend of Chinese platformization, which is as much driven by massive Chinese platform companies as by the State and international finance capital (Jia & Winseck, 2018). All this is to suggest that China is following in the footsteps of the United States as a newly emerging game empire, but very much on its own terms.

As is becoming increasingly clear, despite the economic opportunities in the Canadian App Store, Canadian owned and developed studios are plagued by obscurity (see Table 5). From 2015–2017, we found only 5 Canadian studios in our top lists. Of these five, Blight Games and Blammo Games are owned by the US publishers Electronic Arts and Glu Mobile, whereas only three studios (Ludia, LRDLY, and East Side Games) are independently owned. When analyzing this Canadian quintet, Blight, Blammo, and Ludia worked with the US licensed IP, such as *The Simpsons*, *Kim Kardashian*, and *Jurassic Park*. East Side Games worked with the Canadian licensed IP *Trailer Park Boys*. The only developer to produce its own IP is LRDLY with its *Bud Farms* series, a game that centers on growing and smoking marijuana, a theme that entered the national conversation during the debate to legalize cannabis in 2015.

Conclusion

By quite literally following the money, we questioned whether or not the political economy of game apps is an artifact of platform markets, industry dynamics, or both. In our financial and institutional analysis of the Canadian App Store, we observe three broader economic trends that suggest that the answer is “both.” First, app store incumbency (measured as studios having titles consistently ranked in the top-100) is a key factor determining an app’s ability to generate long-term revenue. The select group of studios with hits either in the App Store’s early years (2008–2010) or during the subsequent switch from the premium to the freemium business model (2010–2012) has had remarkable staying power. Second, incumbency has a strong correlation with the geographical dominance, particularly of the United States, both in terms of revenue generation and capture. Third, acquiring successful studios has been the quickest route to revenue capture. This not only becomes clear when observing how US development declined and revenue capture increased from 2016–2017, but also considering the meteoric growth of Chinese corporate ownership in the same period. We suggest future research to further investigate whether Chinese conglomerates challenge or propel platform capitalism and imperialism.

Our financial and institutional analysis helps us answer the straight-forward question that prompted our research: Are there Canadian apps in the Canadian app stores? The short answer is, of course, there are plenty. Canada has a vibrant game development ecosystem populated by a broad variety of developers, ranging from hobbyists, students and artists, to the hundreds of well-paid developers employed by large game studios in Vancouver, Toronto, and Montréal. This explosion of ludic creativity is not unique to Canada. Across the globe, developers in countries that have historically been at the periphery of the game industry (e.g., Australia, Israel, and China), leveraged the low barriers to market entry to gain a foothold in the app economy. Canada, however, not so much. The Canadian game industry remains an outsourcing hub and functions as a “net-exporter,” with studios making most, if not all of their revenue from foreign sales of content under the aegis of transnational publishers (Consalvo, 2013).

For those well-versed in the political economy of communications, the results of our study will come hardly as a surprise. Why would the app economy be an exception to the cultural industry’s blockbuster dynamic? As argued by Kerr (2017), even if “the barriers to entry have come down, the risks and hit-based nature of the business has not changed” (p. 176). The Canadian game industry mimics patterns of ownership observed in, for example, its film industry. While Vancouver and Toronto are important film production hubs, in 2009 Canadian-made movies counted zero top-10 hits and claimed only a 3.3% national market share (Crane, 2014). We should also note that Canadian developers and consumers have not resisted, but rather embraced the dominant role of US imports in the Canadian media landscape. Netflix, for example, has been widely adopted by Canadian consumers.

Canadian indie game developers, for their part, often consider themselves members of particular local and global communities simultaneously, rather than feeling any sense of national identity (Parker & Jenson, 2017).

The results of our analysis point to the relevance of two debates: the effectiveness of cultural policy against the background of platform and app imperialism, and how to study the political economy of platformization. While Canadian policy makers have been notably proactive in supporting Canadian-made cultural content (Tepperman, 2017), our findings question the impact of such policies in an ecosystem dominated by the US multinationals. Being so closely aligned to the United States, Canada’s position in this dynamic is itself contradictory. Canada is home to a range of institutions and industries that capture revenue far beyond its borders (Kellogg, 2015). Canada’s cultural industries, however, are a favored destination for the United States and European investments, supporting Jin’s (2015) thesis that the United States is able to exploit its unique position in the platform economy. We do not mean to suggest, however, that the solution to Canada’s challenges with app imperialism is to become better at imperialism itself. For one, it seems unlikely that Canada will be able to mount a serious challenge to US hegemony (Mirrlees, 2013), but more importantly, imperialism is in itself an antidemocratic project. If Canada were to prioritize Canadian ownership, it would only be meaningful for the majority of Canadians if this ownership had democratic input. Otherwise, it is likely that Canadian ownership will only result in national oligopolies such as the dreadful trio of Bell, Telus, and Rogers that control the Canadian telecommunications sector. A more effective challenge to platform imperialism would be countered democratically, rather than technocratically.

What, then, does app imperialism tell us about the platformization of cultural production? Leveraging the research affordances of Apple’s iOS platform, our mix of quantitative financial analysis and qualitative institutional analysis yields insight into broader economic trends in platform markets. While our analysis yields a bounded temporal, financial, and regional snapshot, it does also gesture toward broader critical material issues that suggest that platformization marks an intensification of corporate concentration, the commodification of cultural content, and the unidirectional flow of global capital. Ultimately, these insights are meant as a first step toward a broader empirical inquiry into questions concerning economic sustainability and cultural diversity.

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Notes

1. When App Store is capitalized, we refer specifically to Apple's iOS marketplace for apps.
2. Apple's iOS App Store caters to 5 regions, hosting 128 individual app storefronts, each of which are localized in terms of payment options and language, offering regional/national languages, English, or both.
3. SuperData Research collects revenue information directly from payment providers, such as credit card companies and payment intermediaries. Since these financial numbers do not account for a full 100% of all direct revenue, the company uses statistical modeling to increase their accuracy to a level that is acceptable to its clients (financial institutions, media companies, etc.).

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