Before the
Federal Communications
Commission

In the Matter of	)	
Open Internet Remand	)	**GN Docket 14-28**
	)	
Framework for Broadband	)	
Internet Service	)	
	)	**GN Docket 10-127**
	)	
	)	

Comments of
CodeCombat

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Executive Summary

CodeCombat is a Y-Combinator-backed online game that teaches people to code. Since we were founded in early 2013, almost a million people (most of them young American students) have learned the basics and felt the excitement of programming and algorithmic thinking using our platform.

Due to its bandwidth-heavy nature, CodeCombat requires a truly open Internet to provide a seamless and enjoyable educational experience to all. In places with slow Internet connections, the wait times for delivering the site can cause frustration and reduce interest in the topics we hope to teach. If adopted as a rule, the FCC's proposal may result in CodeCombat ending up in a "slow lane" and would therefore pose an existential threat to our business by threatening the seamless and enjoyable experience that allows students to see the magic of programming and computational thinking.

If our startup needs to strike deals with ISPs to prevent technical discrimination of the nature allowed by the Chairman's proposal, our business will have to divert money from hiring employees and producing content, harming the growth of our business. Most of our competitors, which also have extremely bandwidth-heavy applications, would have to do the same. By reducing the quality and availability of technical education to the potential programmers, scientists, and engineers of tomorrow, the FCC's proposal would directly harm the economy of the United States.

As venture capitalist Marc Andreessen stated in 2011, "software is eating the world." That truth is increasingly apparent in 2014. Industries which involve Science, Technology, Engineering, and Mathematics are foundational pillars of the economy, and software is absolutely fundamental to all STEM fields. Programming and computer science often can be intimidating to beginners, especially to those who don't have access to a mentor. Even if a student becomes interested in the field, only 10% of American students have access to computer programming classes in

their schools. Products like CodeCombat provide access to a great education in these skills for everyone, and these are the products which would be harmed by the FCC's proposal.

When CodeCombat first started, resources were scarce, and if we had to negotiate with and pay funds to ISPs, we would have been unable to do so. At that time, we also would not have been able to use the FCC's standard of "commercial reasonableness" or even a public advocate provided by the FCC to protect our interests. We still may not be able to do so. Even if the rule is adopted and we have to fight for our interests ourselves, it will only divert time and money that would have been used to grow our business. We fear not only for our business, but for many of the online education startups that haven't been founded yet that will positively change the world. How can small businesses with little to no financial resources survive and compete if they have to spend the time and money to ensure their content is delivered at the same standards as their much larger incumbent competitors?

For the sake of the future of the economy and the education of our society and children, we need solid rules against technical discrimination and pay-to-play-better deals of the sort that the FCC proposal would allow. The proposal would harm our business as well as our ability to hire new workers and produce new content to educate people in skills necessary for tomorrow's jobs.

We firmly oppose the FCC proposal. We urge the FCC to reclassify ISPs as common carriers under Title II of the Communications Act of 1934 to prevent technical discrimination, paid prioritization, interconnection disputes, and the host of other harmful issues which would arise as a result of the adoption of the proposal.

I. CodeCombat Uses Video Games to Teach People to Code and Learn 21st Century Job Skills

CodeCombat is an online game that teaches people to code. We envision a world in which everyone knows enough about programming to use it to improve their lives. By showing people how easy and fun programming can be, we aim to alleviate the intimidation and mystery around programming which beginners often perceive. In addition, we can direct some of the 3 billion hours a week which the planet spends playing video games, often of no benefit to society, to more useful and educational causes.

We founded CodeCombat in January 2013 when our CEO, George, was trying to learn to code so that he, like many Americans, could stay on top of changes in today's information economy. We saw an engagement problem with online education, and an availability problem with traditional education, and we had an idea for how to fix things.

CodeCombat has four full-time employees and six remote contributors. In addition to our paid employees, over 150 people have contributed to the project, as CodeCombat is entirely open-source. In fact, it's one of the fastest growing open-source projects ever, since developers share our vision for a better way to teach programming. So do investors: CodeCombat is backed by Y Combinator and a dozen venture capitalists and angel investors.

Almost a million people have learned to code using CodeCombat, including 343,000 students during Code.org's Hour of Code, a campaign that both President Obama and Republicans encouraged and embraced. We've also helped thousands of more experienced programmers hone their skills with more advanced levels. In addition, we've translated our game into 40 languages so that students around the world can learn to program as well.

The online programming education industry has exploded in recent years due to the great demand and undersupply of programmers. Over 15 million students took part in Code.org's Hour of Code event, and since then an additional 15 million have participated. Numerous coding bootcamps have emerged across the country, and online technical education providers, such as Udacity and Coursera, have grown immensely.

A free and open Internet is fundamental for all of these endeavors. Whether it's educational games, videos, books, blogs, or software, a free and open Internet allows any content creator who has an idea to cheaply and quickly distribute it to those who want to learn. Due to advancements in hosting providers, now anyone who wants to host content on the Internet can get started with a small budget and a big idea. Such a level playing field would be put in jeopardy if the FCC's proposal is written into law.

In a year, CodeCombat will have added dozens of programming languages and created hundreds of levels. We will both enhance the quality of our offerings as well as their accessibility. Within years, CodeCombat will become the product that students young and old use to learn programming around the world. This will be enabled by a free and open Internet; it could be put in jeopardy by the FCC's proposal.

II. We Could Not Have Founded CodeCombat If the FCC's Proposal Had Been Law

We founded CodeCombat in early 2013 as a response to both the engagement problems with online education and the availability problems with traditional education. We had previously founded Skritter, an online educational product that teaches people how to write Chinese and Japanese characters. We saw how

powerful the gamification of education could be, and we thought the same ideas could be applied to teaching computer science and programming. We started building CodeCombat with no funding, just a vision of how programming education should be.

In those early days, costs were kept low due to a free and open Internet. The fact that we could distribute our relatively large game quickly to people across the world was a fundamental reason for our popularity and growth. We would have been unable to pay Verizon, Comcast, or other ISPs for fast delivery of our content, seriously jeopardizing our growth at that time.

In October 2013, we were invited to speak at Y Combinator's Startup School event on October 19th. At the end of the talk, Paul Graham told us that CodeCombat had been accepted into Y Combinator, making it the first time a startup had been so publicly accepted into the prestigious accelerator. As the news spread and traffic increased, so many players were visiting our site that our servers ground to a crawl under the load.

During that time, we would occasionally experience capacity issues that affected our ability to deliver the game quickly to everyone. We'd receive feedback about how our game wasn't loading in a timely fashion, and many of the people experiencing these issues became frustrated and left. We resolved these issues quickly, and as a result not many people experienced them. If these issues were systematic, as the FCC's proposal would allow, it would be unimaginably detrimental to the experience we seek to deliver. In fact, even if a "slow lane" was fairly robust, consumers would become accustomed to the service in a "fast lane," giving everyone without access to it a disadvantage. We have no doubt our growth would have been irreparably harmed.

We would not be able to pay for priority due to our limited capital at the time, and we would have gone out of business as a result. The same would have happened to any of our innovative competitors were they starting under such an

unfair networking disadvantage.

III. If Adopted, the FCC's Proposal Threatens Our Company's Future and Harms Our Users and Employees

If the FCC's proposal is adopted, it would severely harm our growth in a number of ways. First, if we had to pay a fee to get equivalent service as our larger competitors, we would not be able to use that money and time to grow our business and content offering. We would not be able to hire as many employees to build our product.

Second, CodeCombat and many of our competitors pride ourselves on offering free content. We want to keep all of our content free as long as we can, and the FCC's proposal threatens our ability to do so. Lastly, due to the massive bandwidth requirements of delivering development materials to our remote contributors, we might not be able to afford to sustain a large amount of people working on our open-source codebase. Therefore, the FCC's proposed rule could change how we build our product, how we manage our employees and volunteers, and radically change our cost structure.

We believe technical discrimination, of the kind that the FCC's proposal would allow or otherwise, is simply a form of private censorship, authorized by the agency that is supposed to protect the networks' users and innovators. By restricting access to content, incumbents can use their power to crush smaller forms of competition. The ability to slow down and restrict certain forms of content relative to others at the ISP level is contrary to any definition of freedom and the principles upon which this country was founded.

IV. Our Concerns Are Real

As the FCC is well aware from other filings in the docket, ISPs have suggested that bandwidth-heavy applications should be subject to new tolls and discrimination. We will not belabor this obvious point.

We will note, however, that education companies have specific concerns. For example, Udacity recently struck an innovative deal with AT&T concerning both "nanodegrees" and internships. We think this deal is a positive development for expanding access to jobs skills and potentially to some jobs. We believe, however, that such a deal would be extremely detrimental to innovation and access in the education sector if, as part of the deal, AT&T had the FCC-granted legal right to offer Udacity special access to its networks—terms such as a discriminatory exemption from bandwidth caps or priority for its bandwidth use in times of congestion. The FCC's proposal would empower AT&T to do just that—on discriminatory terms and on exclusive terms. That is a grave concern to the emerging education sector online and all those aiming to learn job skills through new tools, as they would benefit from low cost innovation and an open Internet for all competitors.

V. The "Commercial Reasonableness" Standard Will Not Help Us At All

Having the right to sue the ISPs at the FCC under vague standards of "commercial reasonableness" that allow them to discriminate does not provide any comfort to us whatsoever. We have no legal staff, almost no legal budget, and having to hire a lawyer to fight for our interests at the FCC (even with an ombudsman) would definitely be detrimental to our business.

In addition, if these rules were enacted, foreign ISPs would certainly seek the same right to discrimination, as many of the countries in which our customers live do not enjoy the same freedoms regarding communications as we do: the very ones which are threatened by this proposal.

These threats are real to our business. CodeCombat is extremely bandwidth-heavy, and our service would wither under high latencies. We try to mitigate this behavior with a CDN; we most likely would be unable to negotiate with ISPs around the world to prevent discrimination against our content due to the legal complexity of doing so.

CodeCombat opposes the Chairman's proposal. If adopted, it would severely harm our growth, our ability to create American jobs, as well as the economic competitiveness and future of the United States. Instead, we urge the FCC to reclassify broadband Internet access as a common carrier to implement rules against unjust and unreasonable discrimination, including both unreasonable technical discrimination and a ban on paid prioritization as inherently unjust.

Respectfully submitted,

/s/ Michael Schmatz

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