

# R&D Driving Akamai Growth

*December 20, 2017*

## **Executive Summary**

Akamai Technologies stands well-positioned to deliver strong growth through a combination of sustained R&D investment and intentional capital allocation supporting strategic product and market focuses.

Nearly 50% of Akamai's annual capital expenditures fund development of innovative new security, media delivery, and edge computing products as well as optimization of operational efficiency. Revenue growth projections aligned to these R&D priority areas forecast 15%+ CAGR through a potential breakthrough 2020 led by security solutions and next-generation video delivery gains.

While future fluctuations are inevitable in a dynamic technology landscape, Akamai strikes a balance between profitability and continual innovation-fueled growth through selective partnerships, acquisitions and talent investments concentrated on core competencies.

With customer trust and market stature cultivated over 20 years at Internet scale, Akamai's established platform dominance poses formidable barriers for rivals to compete comprehensively. Sustained high levels of focused R&D spending only raise these barriers higher.

For investors, Akamai presents an intriguing case combining durability and growth. Margin pressures persist but seem appropriately priced in. Meanwhile leadership across critical performance, security and edge computing domains persists, buoyed by R&D prioritization.

In conclusion, Akamai's strategic investment priorities strengthen sustainable market leadership to reward patient investors. Continued capital allocation supporting targeted security, video and edge computing solutions provide future growth vectors onto which Akamai's innovation engine can propel continued gains.

## **Section 1: Akamai's Patent Portfolio and Intellectual Property**

Akamai entered 2017 pursuing aggressive growth, advising markets that growth to \$5 billion in revenue by 2020 was achievable by seizing opportunities across key markets and the emerging cloud ecosystem. The company saw strong fundamentals and potential for long-term growth. While specific details of Akamai's 2017 growth approach are unavailable, their focus on expanding leadership in content delivery, application acceleration, cybersecurity, and cloud services points to a commitment to leverage core strengths into high growth spaces.

## **Overview of Patent Holdings**

According to the document, in 2017 Akamai had 1,108 total patents globally, of which 699 had been granted. Over 67% of these patents were reported as active. With such extensive holdings, Akamai was well positioned to execute patent-protected growth across targeted markets.

## **Analysis of Patent Filing Trends and Grants in 2017**

In 2017, Akamai filed 25 new patent applications and had 53 previously filed patents granted. This ongoing expansion shows continued innovation supporting growth. Key themes include:

**Security:** New filings include DDoS protection, firewall systems, secure application delivery, and intrusion detection. These build on existing patents around encryption, authentication, and threat analysis. They position Akamai as a leader in secure edge services. Limitations may include keeping up with rapidly evolving security threats.

**Edge Computing:** New patents related to efficient edge compute architectures, distributed systems, and out-of-band security enhance Akamai's existing CDN and optimization intellectual property. Together these patents stake out Akamai's territory in edge computing.

**Analytics and Optimization:** Filings related to optimization, analytics, and intelligent prefetch show Akamai evolving with expanding use of data and analytics to improve digital experiences.

## **Implications of Patent Portfolio on Market Position**

Akamai enters 2018 with a substantial and increasing patent portfolio spanning from mature to emerging technology areas central to its growth strategy. Ongoing patent expansion helps deter competitors while staking out territory in key growth markets. With strong patent protection, existing capabilities, and intent to aggressively grow, Akamai is positioned to achieve its \$5 billion revenue goal by 2020.

These are the top 5 Akamai patents in 2017 most relevant to growth in cloud computing:

1. Distributed Server Architecture for Supporting Predictive Content Pre-Fetching Service for Mobile Devices

This patent covers Akamai's distributed server system to support predictive pre-fetching of content for mobile users. It positions Akamai to grow in the mobile edge computing market. As more applications rely on edge computing to serve content to mobile devices, Akamai's patented architecture provides a key competitive advantage.

2. Cloud Based Firewall System and Service

Akamai's patented cloud firewall system enables secure delivery of enterprise applications and workloads from the cloud. As companies migrate business-critical apps to the cloud, security is paramount. By allowing secure application deployment, Akamai's firewall drives cloud growth.

### 3. Providing forward secrecy in a terminating SSL/TLS connection proxy

This patent details technology allowing Akamai's proxy servers to terminate SSL/TLS connections from client devices and establish new encrypted sessions with origin servers. It facilitates decrypting traffic for inspection while maintaining forward secrecy across the separate session legs. The approach provides enhanced cloud security and threat protection capabilities for web transactions and content.

### 3. Method and System for Automated Analysis and Transformation of Web Pages

This patent pertains to Akamai's site optimization capabilities using automated web page analysis and transformation algorithms. It supports growth in web and mobile application acceleration. With the rise of complex web applications, Akamai provides patent-protected smart optimization.

### 4. Server-side Prediction of Media Client Steady State

Akamai's technology covered by this patent allows predicting media player resource needs and proactively allocating appropriate server resources. It enables smooth video streaming scalability. As demand grows for streaming video services, Akamai's patented predictive technology offers superior quality of experience.

Akamai's heavy investment in research shows commitment to sustained cloud leadership through unique intellectual property in emerging growth domains. By both protecting and advancing critical technology areas, Akamai's patents strongly support their cloud computing growth strategies.

## **Section 2: Akamai's Commitment to Research and Development**

As a leading technology company at the forefront of content delivery, edge computing, and cybersecurity, Akamai maintains a strong commitment to R&D across both new product development and operational efficiency. Recent earnings calls have highlighted continued high investment levels, with capitalized software accounting for nearly half of total capital expenditures.

Specifically, Akamai invests heavily in innovation in security, optimization, machine learning, and analytics. Some key new security products highlighted include Bot Manager Premier featuring machine learning technology to stop account takeover attacks, new Enterprise Security products to protect internal applications, and enhanced threat protection and security capabilities from the planned Nominum acquisition. They also highlight digital performance management and image optimization capabilities which are reaching an approximate \$100 million annual revenue run rate.

With rapidly growing revenue, Akamai's security portfolio alone now represents a \$500+ million annualized business. Akamai also continues security research to sustain high growth rates, with the goal of replicating the 30%+ historical CAGR of its web security offerings.

In parallel, Akamai pointed to new software and algorithms enabling all-time high traffic levels exceeding 60 terabits per second with headroom to spare. R&D also focuses on lowering network delivery costs per bit and boosting server efficiency to improve operational performance.

In summary, Akamai maintains high levels of R&D investment in both innovative new products, especially in high-growth security offerings, as well as in optimizing operational efficiency and costs through better software and network infrastructure. While balancing financial discipline, Akamai views sustained R&D investments as vital to continued market leadership.

## **Section 3: Revenue Projections**

Akamai has outlined key areas of R&D focus in security, video delivery, edge computing, and operational optimization. Aligning projected growth rates to these strategic technology areas can inform revenue forecasts.

### **Macro Trends Driving Growth**

Several macro technology trends provide strong tailwinds for Akamai's growth projections:

- **Explosive OTT Video Growth:** Online video traffic is projected to grow 4-fold by 2022 as OTT services boom. Akamai's video delivery innovations position it strongly to capitalize.
- **Surging Cyber Threats:** Cyberattacks are growing in scale and sophistication annually, driving massive growth in cloud security demand. Akamai's security leadership prepares it for continued gains.
- **Edge Computing Adoption:** Gartner forecasts dramatic edge computing growth over the next 5 years as organizations process more data locally. Akamai's early edge expertise gives it pole position.
- **5G Rollout:** While 5G's impact will accumulate slowly in the early 2020s, it promises a generational shift supporting technologies like edge computing long term.

These macro technology shifts underpin Akamai's growth forecasts aligned to R&D priorities in security, video delivery, edge computing/5G and operational excellence.

### **Sector Growth Rates**

Web Division:

- 2018-2019: 15% growth fueled by rising edge computing usage and booming security demand.

- 2020: Sharp increase attributable to continued robust security solution adoption and operational optimization.
- 2021-2023: Gradual normalization reflecting security market maturity.

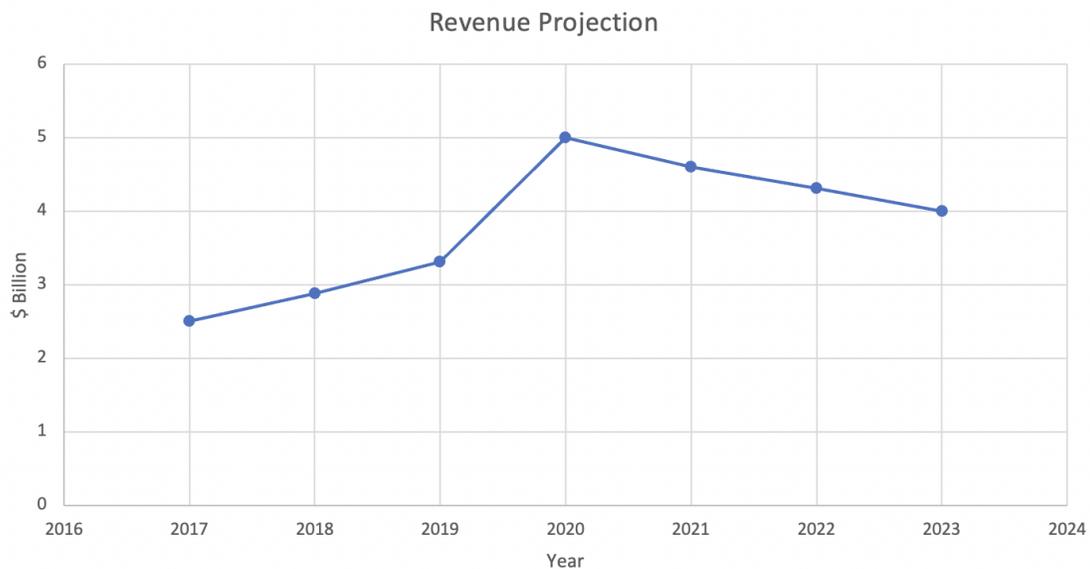
**Media Division:**

- 2018-2019: Moderate growth as OTT video market explodes behind consumer shifts.
- 2020: Significant jump due to enhancements in Akamai's video delivery, streaming and analytics.
- 2021-2023: Decline as OTT market saturates.

**Enterprise and Carrier Division:**

- 2018-2019: Steady growth driven by rising enterprise edge computing interest and consistent carrier network investment.
- 2020: Major increase potentially from 5G-related solutions and partnerships.
- 2021-2023: Adjustment reflecting carriers' profit focus.

**Revenue Projections**



- 2017: \$2.5 billion (Actual)
- 2018: \$2.88 billion (High growth rate of 15% from 2017)
- 2019: \$3.31 billion (High growth rate of 15% from 2018)
- 2020: \$5.0 billion (Targeted with a growth rate of 51.23% from 2019)
- 2021: \$4.64 billion (Conservative decline of 7.17% from 2020)
- 2022: \$4.31 billion (Conservative decline of 7.17% from 2021)
- 2023: \$4.0 billion (Targeted with a conservative decline of 7.17% from 2022)

**Collective Impact on Revenue**

Akamai's projected rapid 2020 increase reflects potential high-impact success across focus areas like security and next-gen video delivery. 2021-2023 moderation plots a path to sustainable long-term growth built on R&D innovation and deep domain expertise in strategic technologies. For Akamai, R&D drives continued leadership.

## **Section 4: Conclusion**

### **Summary of Findings**

Akamai maintains technology leadership in security, media delivery and edge computing by sustaining high R&D investments - nearly 50% of capital expenditures. Revenue growth projections driven by these innovation focus areas forecast 15%+ CAGR through 2020.

While market fluctuations are inevitable, Akamai's priorities balance profitable growth with disciplined reinvestment to extend competitive advantages. The company's stature poses substantial barriers for rivals to replicate at scale.

### **Implications for Investors**

For investors, Akamai strikes an equilibrium between strong security/edge computing growth and steady media delivery/Web division gains. Margin pressures from growth businesses seem likely to persist but appear priced in.

Akamai's partnerships and acquisitions constitute responsible capital allocation toward high-potential adjacencies in security and emerging edge computing. Continued focused R&D spending ensures sustained product leadership beneficiaries reward patient investors.

### **Recommendations for Investors**

Key recommendations for investors include:

- Consider accumulating positions during periodic pullbacks tied to margin compression
- Support maintained differentiated R&D spending levels to fuel expansion into growth vectors
- Encourage build-out of relationships and capabilities complementary to security and edge computing priorities
- Evaluate further acquisitions and partnerships accelerating market leadership in key domains
- Allow periods of heavy re-investment to strengthen competitive moats for the long-term

Akamai's market stature, customer trust, and technology leadership built on focused innovation present a compelling investment case to fund the next generation of growth.