








The Ripple Effect

How the Telegraph Significantly Boosted Advertising-Driven KPIs through Image Optimization

KEY IMPACTS	
	Achieved 9.6% overall improvement in page load time
	Realized 2% overall improvement in overall session length
	Decreased page load time by nearly 34% for mobile devices
	Increased sessions lengths by almost 13% on mobile devices
	Boosted Engagement & Advertisements Displayed
	Freed Engineering Resources to Focus on Strategic Initiatives
	Delivered 0.193 more pages per session on mobile devices

According to analysis by Akamai, a publisher with 100 million monthly unique visitors (3.3 million DAU) has the potential to generate an additional £65,000 each month due to the increase in page views per session associated with using Image Manager. For mobile publishers, the potential increase could be £77,000 each month.

Keeping Pace with Digital Trends

Telegraph Media Group (TMG), a multi-media news publisher, grapples with these issues. The Telegraph is a true digital pioneer – its website launched four years before Google and 10 years before Facebook – but it too is forging a new path.

Toby Wright, CTO of TMG, leads the teams that design and develop digital products and services, including The Telegraph website. Competing with other digital pioneers who have established a high standard for user experiences, he and his teams support a strategic initiative to deliver premium content. To inspire readers from around the globe to subscribe and make purchases, TMG must deliver digital products and services quickly and securely, and drive more engagement.



telegraphmediagroup

**Telegraph Media Group:
Still Setting the Standard**

Telegraph Media Group publishes world-renowned, agenda-setting content found in its titles The Daily Telegraph, The Sunday Telegraph, The Telegraph website and The Telegraph weekly world edition.





380+ million pages to 84 million unique visitors/mo consume 15k stories & 900 videos from 450+ journalists from The Telegraph's website¹.

¹ <http://spark.telegraph.co.uk/toolkit/platforms/desktop/>

Can Page Performance Be Tied to Engagement Rates?

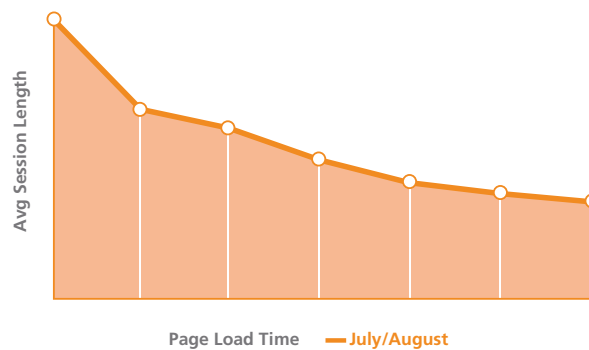
In discussions with Akamai, TMG underscored the need to drive greater engagement. Akamai recommended TMG allow it to facilitate a test to answer the following questions:

- What would happen if page weight was significantly reduced? In turn, how much faster would pages load?
- If page loads were X seconds faster, what would be the impact on user session length, as defined by pages per session?
- How would longer session lengths impact the number of ad impressions served, and in turn, ad-driven revenue?

The test focused on reducing the weight of images, which account for a significant percentage of a given page's weight, the hypothesis being that small incremental performance improvements would translate into measurable value for TMG. And, Akamai had recently launched its Image Manager product, which reduces the weight of images by delivering the right size and resolution given the end device's screen size and connectivity profile at that moment.

Each Second of Delay Reduces User Session Length

The test began in July 2016 and, over a two-month period, SOASTA (an independent digital performance measurement company) collected baseline data without any image enhancement.



Above: Representative performance-behavior curve for Telegraph website, July and August 2016.

This baseline data confirmed that each second of additional page load time reduces average user session length; one second of added delay can cause an 11.5% drop.

Image Manager Drives More Engagement

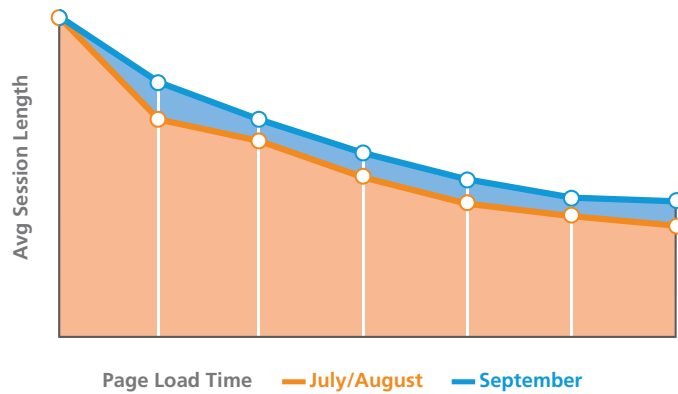
On September 1, Akamai turned on Image Manager. Immediately, image weight declined 10-60% with no perceived change in image quality. This generated big declines in overall page weight. On a typical day, Telegraph's home page weight declined by 20% overall. This led to a measurable uptick in session length.

Benefits of Akamai Image Manager

Image Manager simplifies and automates the process of transforming and quickly delivering the highest quality derivative images to web visitors and mobile app users. You get:

- ✓ **Faster Time to Market.**
Automate the manual effort to create, modify and publish derivative images.
- ✓ **Reduce Storage and Infrastructure Costs.**
Eliminate DIY imaging infrastructure, store one pristine image, dynamically create and cache derivative images to improve offload.
- ✓ **Lighter and Faster Pages.**
Automatically reduce image size for all users across desktop and mobile sites and apps, boosting performance, engagement, and business results.
- ✓ **Quality without Compromise.**
Automatically adjusting images for optimal visual quality treats visitors to a web or mobile app experience that is beautiful and fast.

SOASTA collected data for 29 more days. Across all device types and connectivity profiles, page load times declined by 9.6% and user session lengths increased by 2%. Page weight improvements yielded longer sessions on average. To be exact, 0.041 pages longer.



Page load times decreased 9.6% and session length increased 2%

Optimizing images for mobile is even more impactful

Millions of smartphone users consume Telegraph content on their mobiles every month. Together, mobile devices of all types now capture the majority of page views. So the Telegraph team was eager to see Image Manager's impact on mobile-only sessions.

For those accessing the Telegraph via iOS devices on cellular connections, the impact exceeded results for all devices and connection types. Mobile-only page load times decreased by 33.8%, while mobile session lengths increased by 0.193 pages, or 12.8%.

² <http://spark.telegraph.co.uk/toolkit/platforms/mobile-tablet/>

“For a business like ours, with hundreds of millions of monthly interactions, these seemingly small changes snowball into massive impact.”

– **Toby Wright**
Chief Technology Officer, Telegraph Media Group

Conclusion: The Numbers Tell the Story — Small Improvements Can Trigger Major Business Returns

ROI potential across all devices + all connection types

Overall improvement to average pages per session: 0.041

		Smaller publisher with less expensive inventory	Medium publisher with moderately priced inventory	Larger publisher with more premium inventory
Before Image Manager	Total Page Views Per Month	50,000,000	200,000,000	500,000,000
	Total Sessions Per Month	25,000,000	100,000,000	250,000,000
	Average Pages Per Session	2.0	2.0	2.0
Image Manager Impact on Page Views	Additional Pages Per Session	0.041	0.041	0.041
	Total Page Views Per Month	51,025,843	204,103,372	510,258,429
	Additional Page Views Per Month	1,025,843	4,103,372	10,258,429
Image Manager Impact on Ad Revenue	Ad Impressions Per Page	4.0	4.0	4.0
	Incremental Ad Impressions Per Month	4,103,372	16,413,487	41,033,718
	Average CPM	£ 3.00	£ 4.00	£ 5.00
	Incremental Revenue Per Month	£ 12,310.12	£ 65,653.95	£ 205,168.59
	Incremental Revenue Per Year	£ 147,721.38	£ 787,847.38	£ 2,462,023.05

ROI potential for all iOS mobile devices, cellular connectivity only profiles

Overall improvement to average pages per session: 0.193

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	Total Sessions Per Month	25,000,000	100,000,000	250,000,000
	Average Pages Per Session	2.0	2.0	2.0
Image Manager Impact on Page Views	Additional Pages Per Session	0.193	0.193	0.193
	Total Page Views Per Month	54,837,098	219,348,393	548,370,983
	Additional Page Views Per Month	4,837,098	19,348,393	48,370,983
Image Manager Impact on Ad Revenue	Ad Impressions Per Page	1.0	1.0	1.0
	Incremental Ad Impressions Per Month	4,837,098	19,348,393	48,370,983
	Average CPM	£ 3.00	£ 4.00	£ 5.00
	Incremental Revenue Per Month	£ 14,511.29	£ 77,393.57	£ 241,854.91
	Incremental Revenue Per Year	£ 174,135.54	£ 928,722.87	£ 2,902,258.97



About Akamai

As the world's largest and most trusted cloud delivery platform, Akamai makes it easier for its customers to provide the best and most secure digital experiences on any device, anytime, anywhere. Akamai's massively distributed platform is unparalleled in scale with over 200,000 servers across 130 countries, giving customers superior performance and threat protection. Akamai's portfolio of web and mobile performance, cloud security, enterprise access, and video delivery solutions are supported by exceptional customer service and 24/7 monitoring. To learn why the top financial institutions, e-commerce leaders, media & entertainment providers, and government organizations trust Akamai please visit www.akamai.com, blogs.akamai.com, or [@Akamai](https://twitter.com/Akamai) on Twitter.



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Telegraph Media Group (TMG) is a multi-media news publisher of the world-renowned, agenda-setting content found in its titles: The Daily Telegraph, The Sunday Telegraph, The Telegraph website and The Telegraph weekly world edition. The Daily Telegraph, The Sunday Telegraph and The Telegraph are known for their award-winning, investigative editorial. The Daily Telegraph is the UK's best-selling quality daily newspaper with a long established history of over 160 years.

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