

O-NET

OPTICAL NETWORKING IP CASE STUDY

O-Net pushes light forward—and PatentPC makes sure the world can't copy the brilliance.

INTRODUCTION

O-Net Technologies (Shenzhen) Group Co., Ltd. has been building optical components since October 2000 and has traded on the Main Board of the Hong Kong Stock Exchange under stock code 877 since April 2010. From its headquarters at 35 Cuijing Road in Shenzhen's Pingshan District, with branches in Beijing, Hangzhou, Wuhan, Hong Kong, North America and Europe, the group operates across three segments — optical networking, automation with machine vision and sensing, and touch panel — and is vertically integrated from chips through devices and modules to complete subsystems.

The product catalogue is the whole optical layer: micro optics, amplifiers, couplers and connectors, free-space isolators, integrated coherent receivers, polarisation-maintaining components, pump lasers, signal monitoring, tunable filters, variable optical attenuators, switches, wavelength division multiplexers, and data centre optics. O-Net has shipped more than five hundred thousand active optical cables at 25Gb/s, 4x10Gb/s and 4x25Gb/s into major North American data centres since 2015, moved 100G QSFP28 CWDM4 into high volume, and carried 100G single-lambda and 400G PAM4 into development. It is a key high-tech enterprise of the national Torch Programme and holds a national enterprise technology centre.

BACKGROUND

In a single reporting year O-Net applied for seventy-six patents — twenty-five utility model patents, forty-three invention patents and eight applications under the Patent Cooperation Treaty — against revenue of HKD 2,035.1 million, up 27.3 per cent year on year. Seven patents were approved in the same period. Very few component vendors of comparable size file at that rate.. Co-packaged optics is the most patent-dense contest in the industry right now, and it is being fought principally in the United States, where the hyperscale buyers are, where the litigation happens, and where an exclusion order can remove a competitor from the market. Utility model patents filed in China do not help there.

“The question our board now asks is whether we are filing in the jurisdictions where our customers, our competitors and our disputes actually live. PatentPC’s portfolio building for us has proven invaluable.”

KRENA SOLHEIM, PATENT MANAGER, O-NET COMMUNICATIONS (USA) INC.

LEADERSHIP



KRENA SOLHEIM

Patent Manager, O-Net Communications (USA) Inc.

Krena Solheim has been with O-Net's United States organisation since March 2017, joining O-Net Communications (USA) Inc. in San Jose and taking on business operations for O-Net Silicon Photonics (USA) Inc. from February 2021. Her remit spans the administrative and operational spine of both Zanker Road entities — the point where a Shenzhen-listed group's American research and development work meets American filing practice.

That position makes her the natural owner of the cross-border question at the centre of this study: inventions conceived in California, inventions conceived in Shenzhen, and a single family that has to be filed correctly in both directions without forfeiting rights in either.

SOLUTION

PatentPC serves O-Net's global IP needs by treating its photonics and optical-networking innovations as strategic assets that must be protected across jurisdictions, standards bodies, and fast-moving competitive landscapes. O-Net operates in a domain where breakthroughs in fiber components, optical modules, and high-precision manufacturing can be rapidly commoditized if not defended with system-level patents. PatentPC structures O-Net's filings to secure not just individual components, but the full architecture—signal-conditioning flows, manufacturing tolerances, calibration methods, and integration logic—ensuring competitors cannot replicate the value even if they imitate surface-level features. This approach gives O-Net a durable moat in markets where speed and precision define leadership.

Equally important, PatentPC aligns O-Net's IP strategy with global commercialization pathways. As O-Net expands across North America, Europe, and Asia, PatentPC ensures filings are drafted with international harmonization in mind, reducing friction during PCT national phases and minimizing vulnerability to regional legal challenges. The firm's AI-enhanced prior-art analysis helps O-Net anticipate competitive filings and position its claims to avoid crowded patent spaces, strengthening freedom-to-operate in emerging optical-networking segments. This proactive posture allows O-Net to innovate confidently, knowing its IP portfolio is built for global enforcement.

PatentPC also supports O-Net's role in industry standards and ecosystem partnerships. Optical-networking companies often contribute technology to standards bodies, which can expose core innovations if not properly protected beforehand. PatentPC structures O-Net's filings to secure foundational claims before disclosures occur, ensuring the company maintains ownership even as its technology becomes part of broader industry specifications. This strengthens O-Net's negotiating leverage with OEMs, carriers, and manufacturing partners, turning IP into a strategic tool rather than a defensive afterthought.

Finally, PatentPC enhances O-Net’s operational reliability by managing complex filing pipelines, divisional strategies, and continuation practices across multiple regions. The firm’s disciplined prosecution style ensures deadlines are met, office-action responses are strategically crafted, and portfolios remain coherent as O-Net scales. With PatentPC, O-Net gains not just patents, but a global IP infrastructure—one that protects innovation, accelerates market entry, and reinforces the company’s position as a leader in advanced optical technologies.

PatentPC also strengthens O-Net’s global operations by working seamlessly with corporate accounting teams to simplify how IP assets are tracked, valued, and budgeted. In large multinational environments, patents often create accounting friction—different jurisdictions impose different fee schedules, maintenance timelines, and capitalization rules. PatentPC structures O-Net’s filing calendar, annuity schedules, and prosecution workflows so accounting receives predictable, pre-mapped cost timelines rather than scattered, reactive expenses. This transforms IP from an unpredictable cost center into a clean, forecastable asset class that aligns with quarterly planning and long-term financial models.

Beyond cost predictability, PatentPC helps accounting teams classify and document IP assets in ways that support audits, investor reporting, and cross-border compliance. The firm provides clear documentation packages for each filing—covering invention scope, commercial relevance, and expected lifecycle—which simplifies capitalization decisions and strengthens the company’s ability to treat patents as strategic intangible assets. For a global company like O-Net, this reduces administrative overhead, improves financial clarity, and ensures the IP portfolio is reflected accurately and advantageously in corporate financial statements.

RESULTS

76	500k+	3
PATENTS APPLIED FOR IN ONE YEAR	AOCS INTO NORTH AMERICA	SEGMENTS TO COVER

The first number proves the culture already exists. O-Net's engineers disclose, and the company files. What a deliberate United States programme changes is not the volume of invention but its reach — turning domestic filings into enforceable positions in the market where the group's largest customers buy and its closest competitors sell.

O-Net saved in two directions at once. First, by working with experienced attorneys backed by a technology stack, it avoided paying outside counsel to learn photonics and optical networking, and received applications with more technical depth on a far shorter cycle. Second, by making the change, O-Net now pays less while receiving more accurate and more efficient patent services — with claim drafting and strategic advice still owned by its patent attorneys.

“PatentPC has proven to us that it is indeed possible to receive a higher level of service, quick turn-around, responsiveness to inventors by returning calls in an hour, all at a lower cost. We're thrilled to work with PatentPC.”

KRENA SOLHEIM, PATENT MANAGER, O-NET COMMUNICATIONS (USA) INC.

Filing at home is not the same as protecting your market.

PatentPC pairs experienced patent attorneys with practice automation across photonics, optical networking and semiconductor packaging — including cross-border filing sequencing, foreign filing licences, and inventorship and ownership across affiliated entities. Talk to us about a United States portfolio review.

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