

**360°
Imaging
Services**

RICOH
imagine. change.

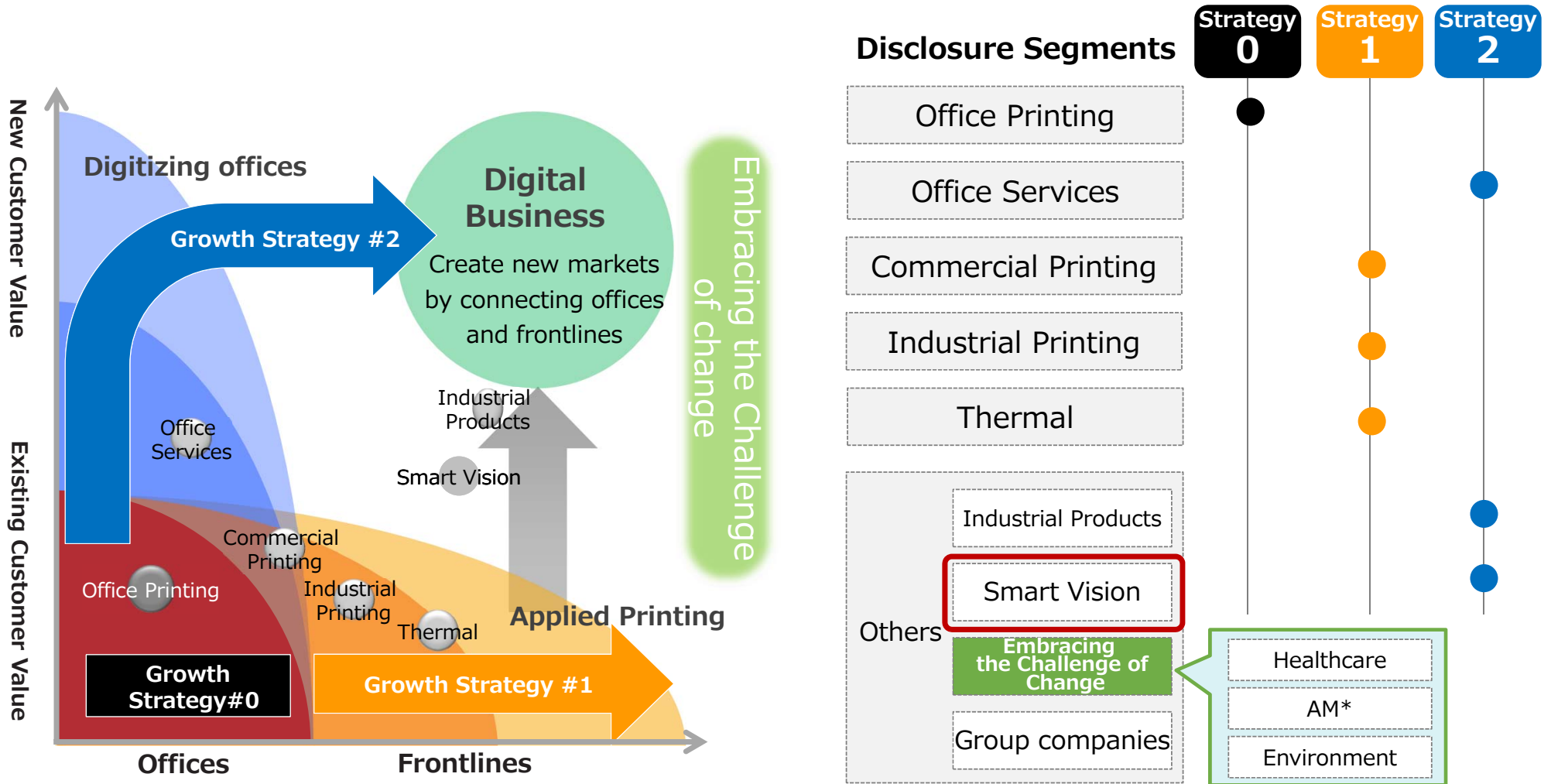
April 11, 2019

Wataru Otani

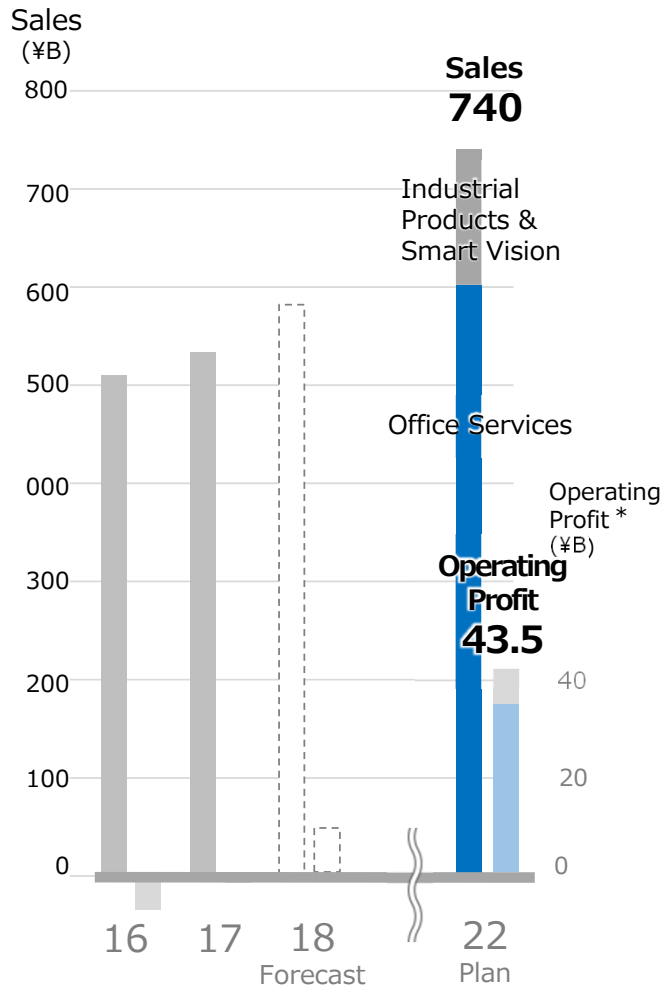
**General Manager of
Smart Vision Business Group**

Ricoh Company, Ltd.

RICOH Ignite Growth Strategy



*AM: Additive Manufacturing



Growth Strategy #2 toward FY2022

Expand Office Services business earnings and create new businesses

Office Services:

Reinforce our structure and invest extensively to expand operations and create a business model that produces stable earnings

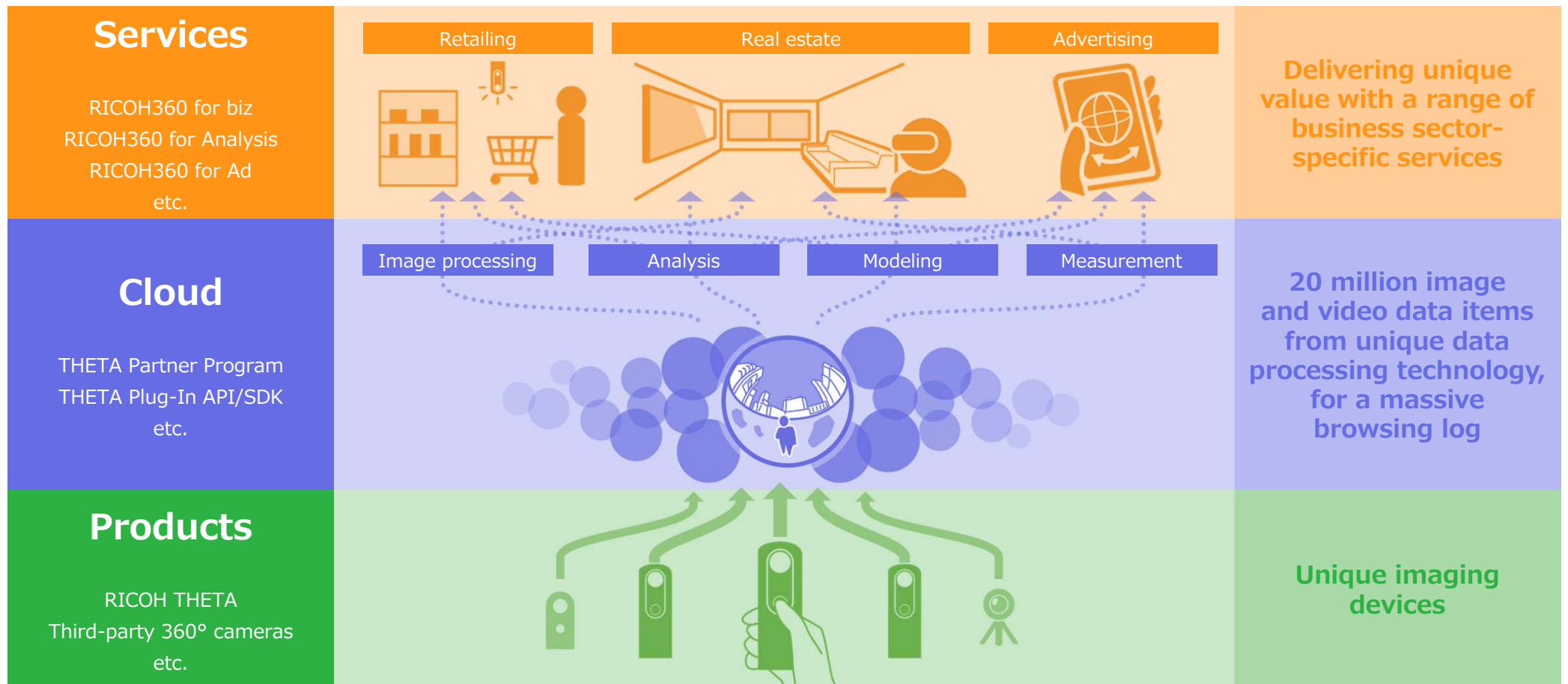
Digitizing frontlines : RICOH360 data service

Industrial Products:

Combine optical technologies that Ricoh has amassed over the years with Internet of Things, artificial intelligence, and other advanced technologies and visualize information through information conversion from data recognition processes to enhance the productivity of societies

About the 360° Imaging Services

Service platform employing largely 360° images and video data



Overview of 360° Imaging Services Business

Real estate

- 360° virtual room tours
- Adding CG parts for facility and other services



Advertising

- Online banner ads employing THETA 360° images
- Web ads optimized by AI learning



Stores

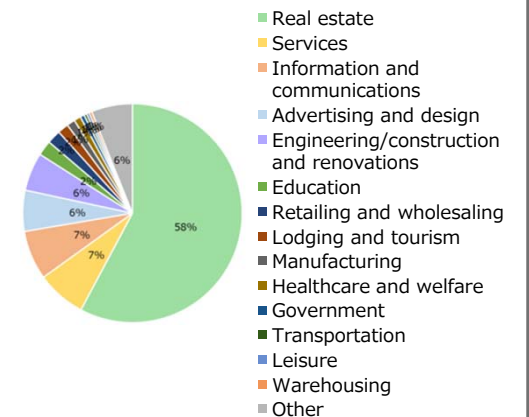
- Behavioral analysis services using THETA in stores, offices, and other locations
- Cloud services harnessing AI recognition technology



Customer growth

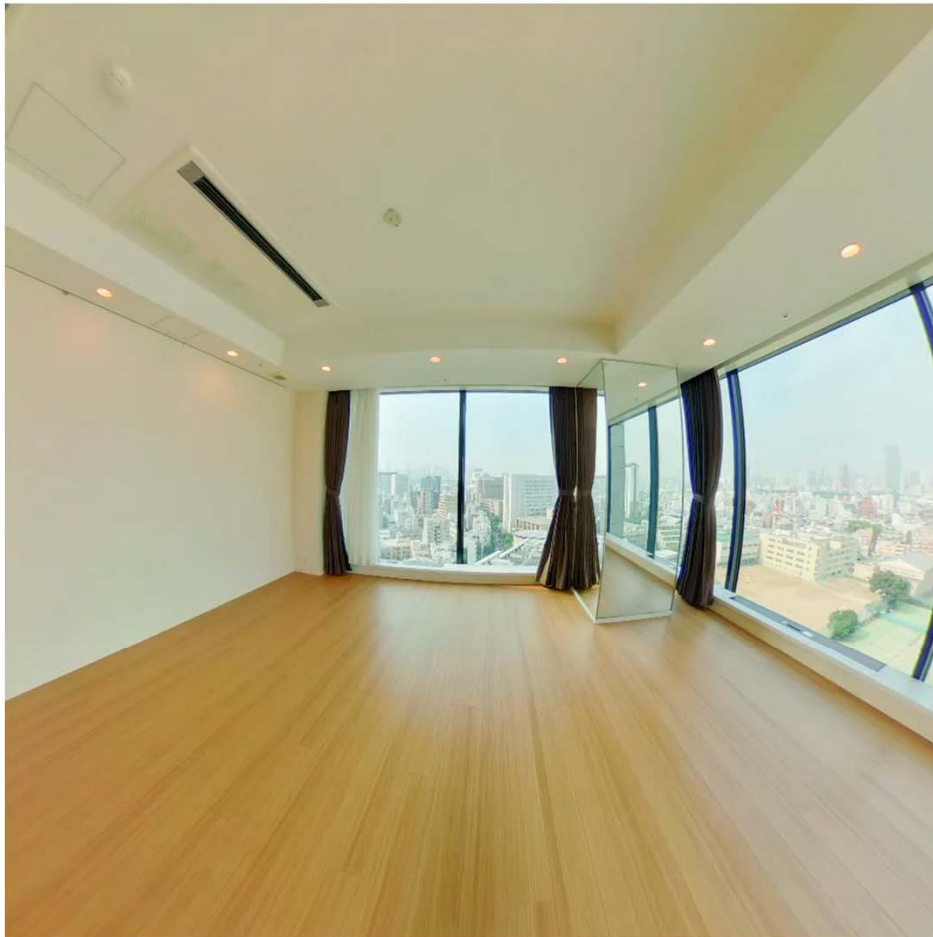


Customer business sectors



Service Examples (Real estate)

Image hosting service



VR staging (with computer-generated images) service



Business Climate

Category	Needs of prospective customers	Ricoh's strengths	Market scale
Marketing and sales support <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%; padding: 2px;">Real estate</div> <div style="width: 50%; padding: 2px;">Tourism</div> <div style="width: 50%; padding: 2px;">Used cars</div> <div style="width: 50%; padding: 2px;">Architecture</div> </div>	<ul style="list-style-type: none"> ● See things before going to real location ● Focusing specific area ● View furniture and facilities layouts ● Assess impacts of design changes 	<ul style="list-style-type: none"> ● 360° camera pioneer with the THETA ● Systems linked with cameras ● Image processing technology applications ● More than 20 million properties and items data 	<p>Japan: ¥7 trillion Overseas: ¥34 trillion</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">Online advertising market scale</div>
Advertising	<ul style="list-style-type: none"> ● Boost click rates ● Attract interested people effectively ● Create simple contents 	<p>And...</p> <ul style="list-style-type: none"> ● Using deep learning and AI to analyze user perspectives and optimize presentation ● Data sets of user browsing histories 	
Stores Facilities management Inspections	<ul style="list-style-type: none"> ● Easily install and move location ● Analyze customer movements ● Check and record on-site conditions 	<p>And...</p> <ul style="list-style-type: none"> ● Face and object recognition technology applications 	<p>Worldwide: ¥63.9 billion</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">Digital marketing market</div>

Business Strategies and Key Initiatives

Key
business
strategy

Make RICOH 360 portal a cross-industry platform by 2022

Main measures

Technologies

- Acquire AI data sets and other advanced technologies
- Build a menu structure that enables customers to choose services and gives them easy access to updates and new services

Development

- Build and run a Web platform that enables service APIs and new technology deployments
- Bolster external collaboration to improve services menu
- Develop hardware for THETA and other edge device processing

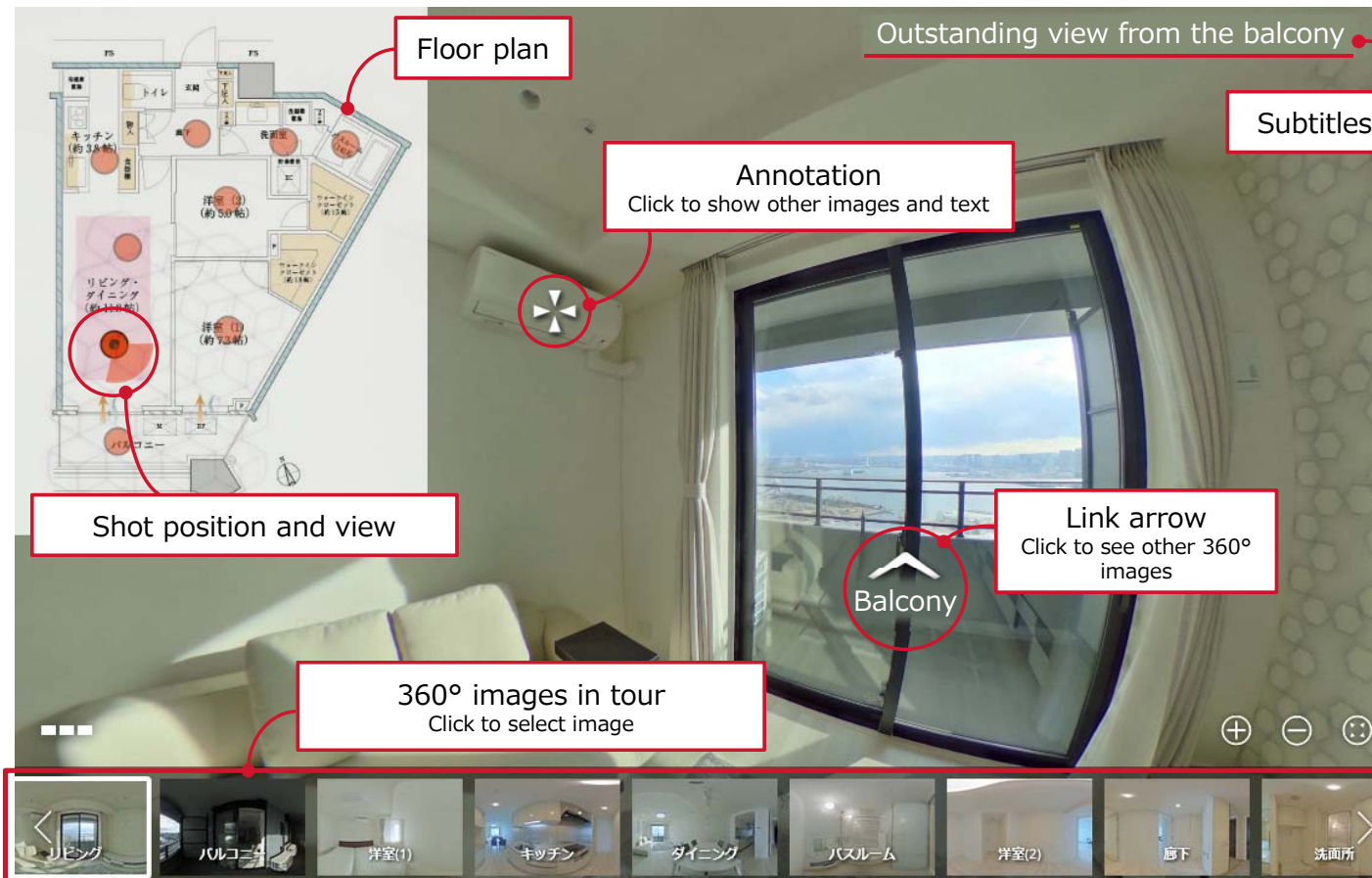
Production

- Link and standardize Web platforms with Ricoh Smart Integration
- Hybrid approach combining edge device production in-house and original design manufacturer collaboration

**Sales and
service**

- Make it possible to integrate estimate, sales, contract management, invoicing, and revenue designs in the one platform
- Enhance service menu and provide service and price packages matching customer plans

Services (THETA 360.biz*1)



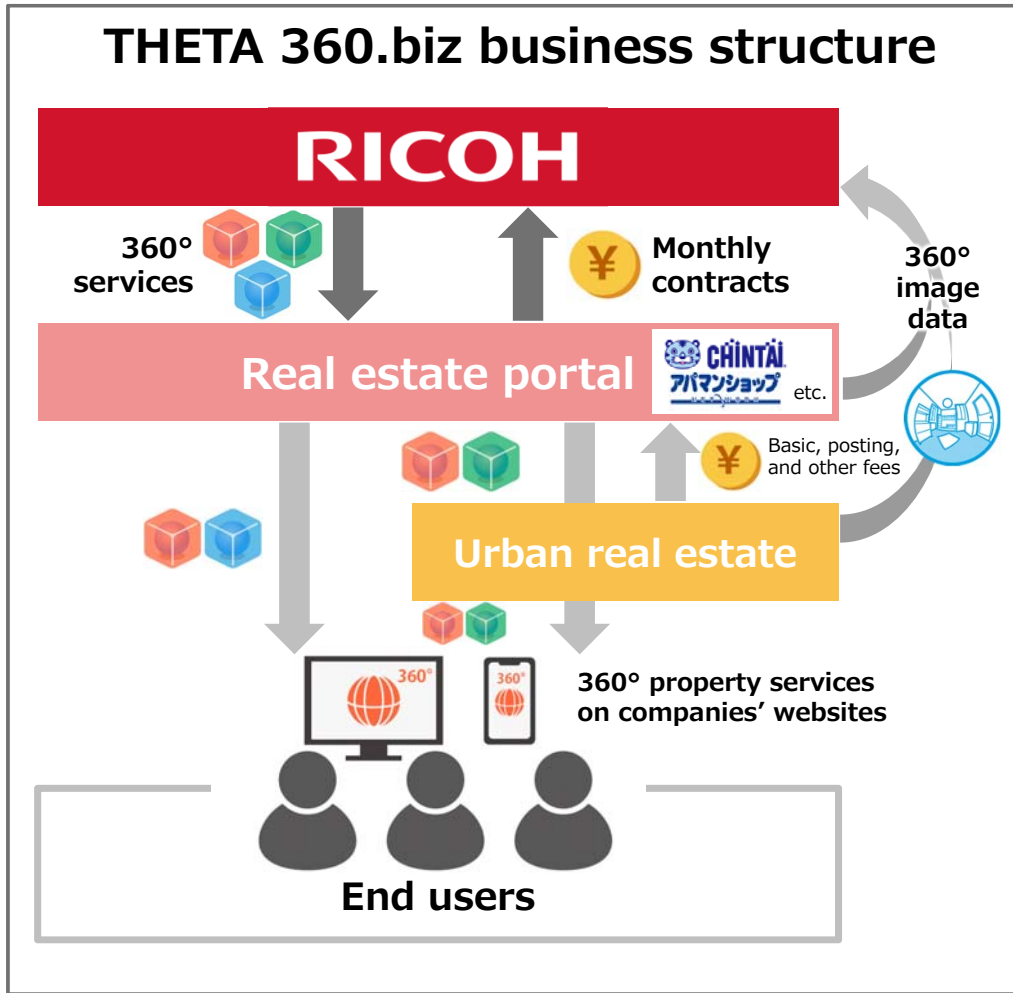
- Enabling browsing as if moving around in by presenting omnidirectional images in one screen and linking them with the floor plan

*1 : One of RICOH360 menus



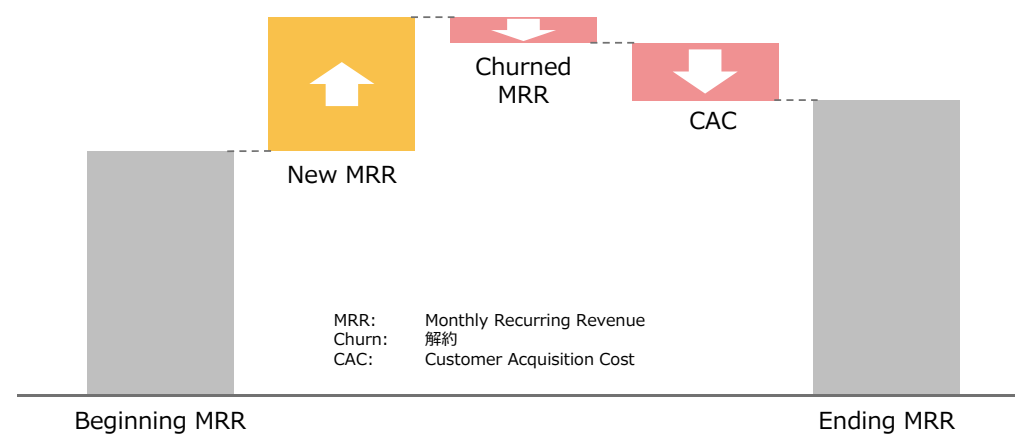
- Embedding top-quality computer graphics by leveraging Ricoh's optical and image processing technologies

Services (THETA 360.biz)

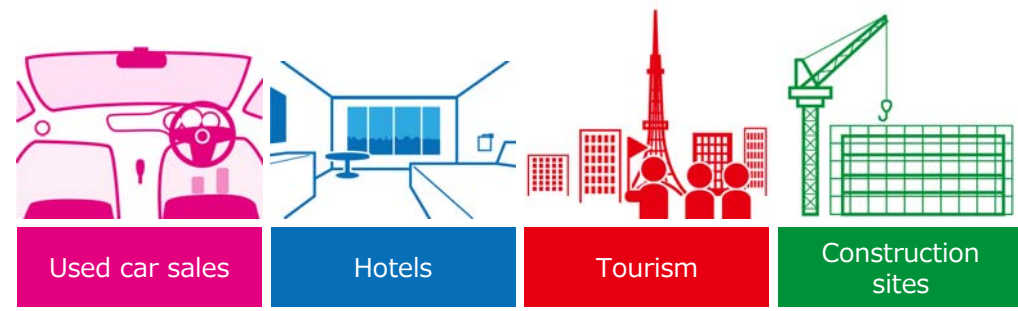


Earnings structure

Model of increasing returns from securing and retaining customers



Applications



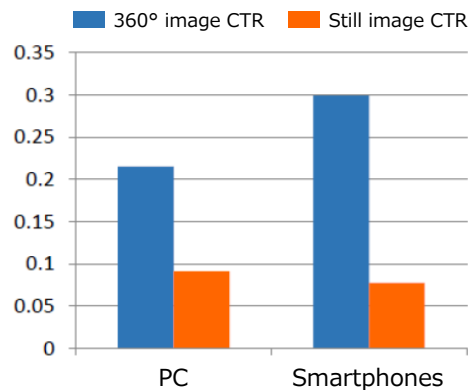
Services (Advertising and Shops)

Advertising

- Distribute and display 360° banner ads that move using Ricoh's AI learning



Still images and click-through rate (CTR) comparisons



360° banner CTRs are far higher than those of still image ones

PC: **2.4-fold**

Smartphone: **3.9-fold**

*Our records

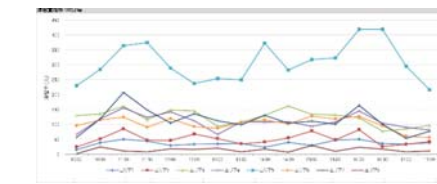
In-store behavioral analysis

- Behavioral analysis service that uses deep learning-based image recognition technology to measure the numbers of people in stores, at event venues, offices, and other locations



People numbers

Showing changes in numbers of people by area and time



Heat map view

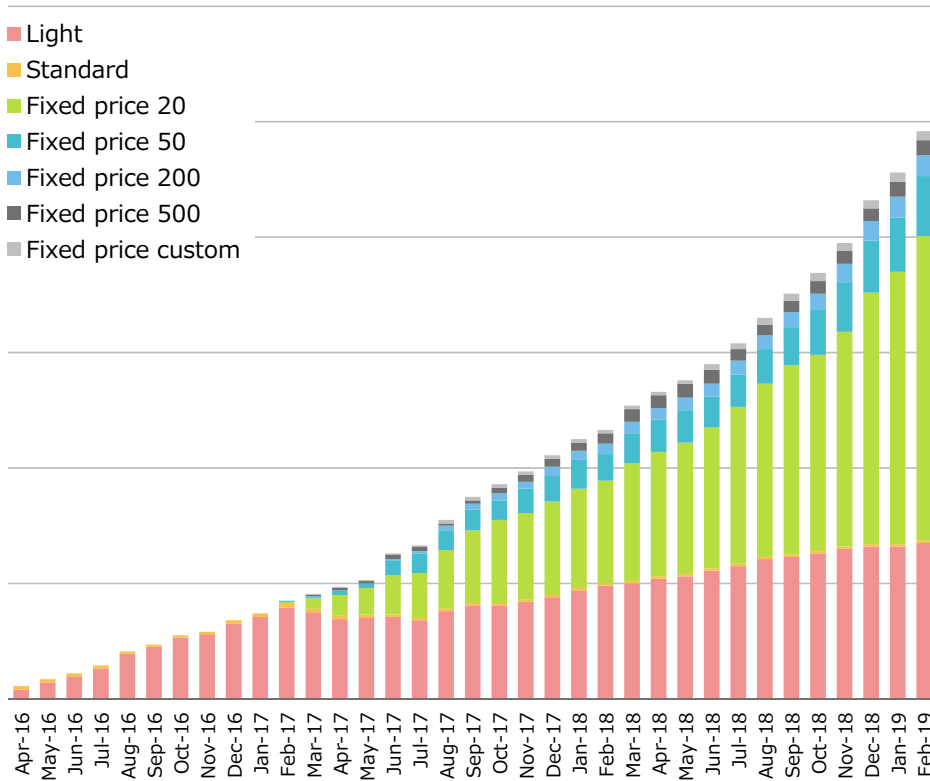
Showing popular areas (hot spots) and unpopular ones (cool spots)



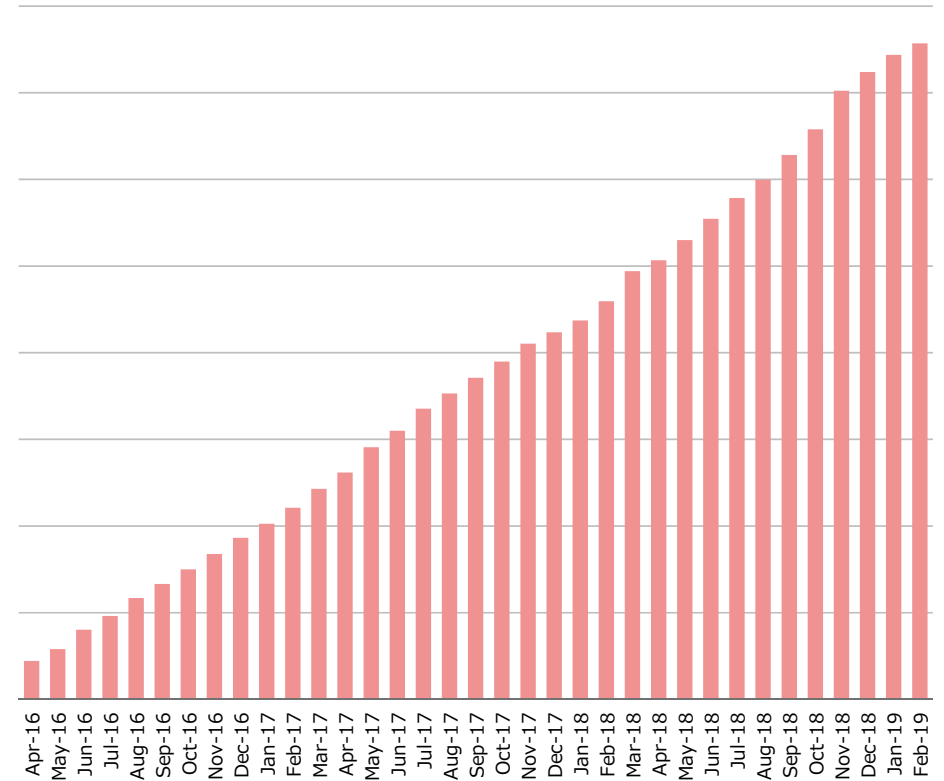
Number of Corporate Subscribers (THETA 360.biz)

Number of paid subscriptions

- Light
- Standard
- Fixed price 20
- Fixed price 50
- Fixed price 200
- Fixed price 500
- Fixed price custom



Number of free subscriptions

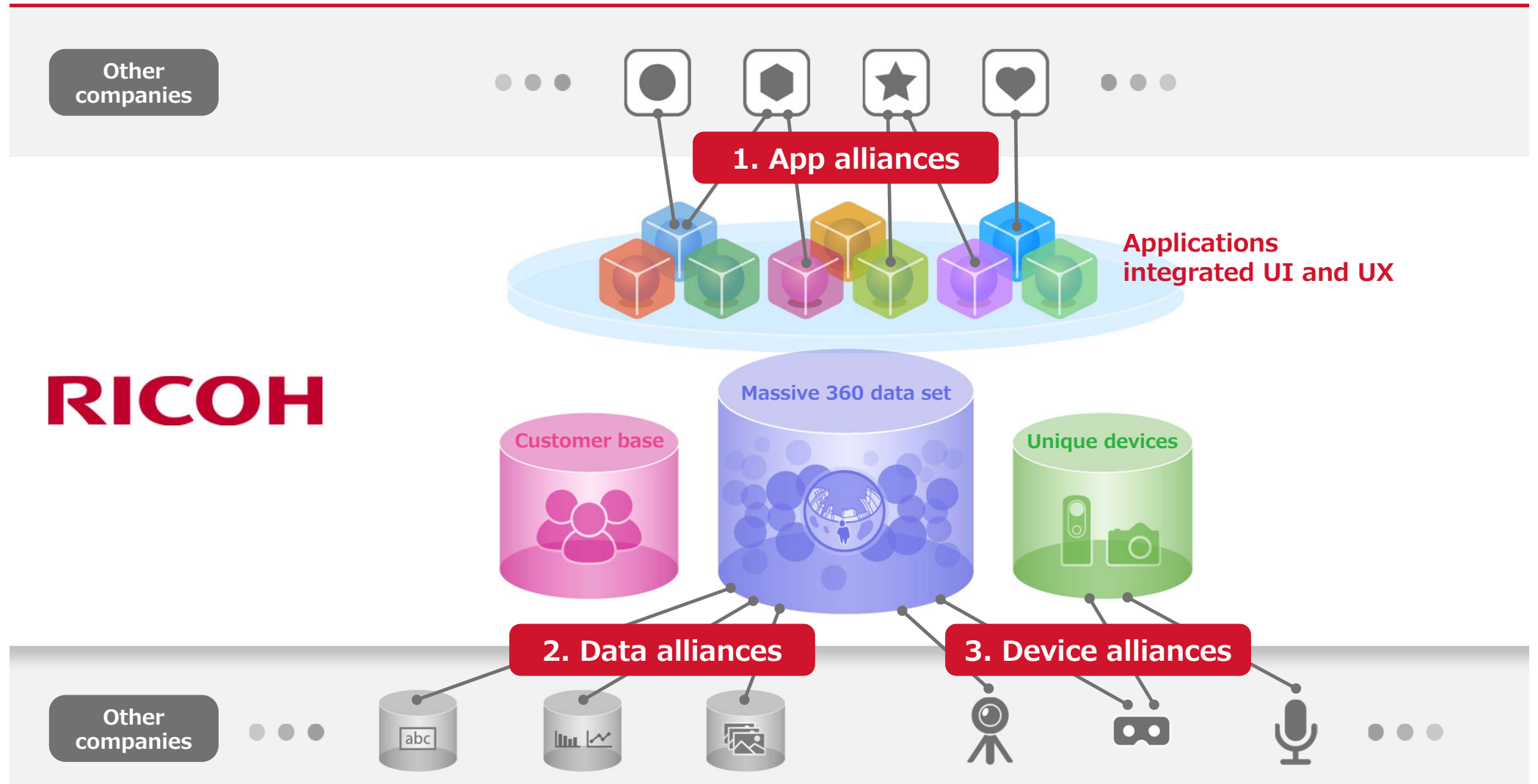


Note: Data as of February 19, 2019

April 11, 2019

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Alliances with External Partners



RICOH



ABOUT

すべてを撮ったそのあとはRICOH360

RICOH THETAによる360°全天球画像／映像は、その場所その瞬間すべてをとることができるので、多くを伝えたり、あとからたくさんさんの情報を引き出すことができます。

RICOH360は、これまで蓄積した膨大な360°全天球画像／映像データとログデータ、そして独自のデータ処理技術によって、360°ならではの価値を提供します。



Webで集客したい方

<p>THETA 360.biz</p> <p>誰でも簡単に360°コンテンツを作成可能なツール</p> <p>高品質な360°コンテンツを誰でも簡単に作成可能。Webサイト、SNS、チラシ等のオンラインマーケティングのパフォーマンスを向上させ、更に360°空間をシェアする事で、掲載しているメンバーへの情報共有を大幅に改善します。</p> <p>Learn more ></p>	<p>RICOH360 - Ad</p> <p>360°で撮るWeb/TV/広告</p> <p>RICOH THETAで撮影した360°映像を活用し、Web/TV/広告、展示の場やイベント会場、展示場、海外イベント会場等に活用しています。RICOH独自の映像加工、リアルな空間を再現する事で、視聴者に没入感を与え、人の目を引きやすくなります。</p> <p>Learn more ></p>	<p>RICOH360 - VRステージング</p> <p>CG技術を活用して空間を魅力的に演出</p> <p>リアリティを追求した演出や小物などのCGを効果的に配置し、空間を魅力的に演出します。例えば、店舗のインテリアコーディネート等の用途をイメージで360°で提供できます。Web集客や販促ツールとして活用する事によりお客様の価値を最大化します。</p> <p>Learn more ></p>
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店舗・イベントで集客したい方

<p>RICOH360 - Analysis</p> <p>お客様の行動を簡単に、手軽に可視化</p> <p>「POPの効果がどうだった?」「どの表示が人気?」など、店内やイベント会場でお客様の行動を「見える化」し、今まで経験的に把握していたことを数値化します。RICOH THETAによる360°空間を撮影するカメラサービスにより360°空間に広がるお客様の行動を計測します。</p> <p>Learn more ></p>	<p>RICOH360 - VR Presenter</p> <p>VRゴーグルによるプレゼンテーションツール</p> <p>店舗にまたお客様に360°映像を配信し、VRゴーグルで閲覧している360°映像を効果的に活用し、お客様を魅了する事で、お客様の行動を可視化し、お客様の行動の向上を実現します。</p> <p>Learn more ></p>	<p>RICOH 360 Snap</p> <p>子供から大人まで、360°の世界を紙やデジタルで楽しむ</p> <p>RICOH THETAで撮影した映像をオリジナルのアプリやスタンプで印刷し、カードや手帳などに貼る事で、お客様がいつでもどこでも360°の世界を楽しむことができます。例えば、全額返金サービスで360°で撮影して、来店時に記念品としてプレゼントできます。</p> <p>Learn more ></p>
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ご自身でシステム・サービスを構築したい方

<p>RICOH Developer Connection</p> <p>インベティブなアプリケーション開発のためのプラットフォーム</p> <p>RICOH Developer Connectionは画像・映像を活用するアプリケーション開発者のためのプラットフォームです。RICOHが提供するSDKやAPIを活用することで、RICOH THETA/THETA One/THETA S/THETA Vを活用するアプリケーションを開発・構築できます。</p> <p>Learn more (英語サイト) ></p>	<p>RICOH R Development Kit</p> <p>360°全天球映像を、24時間ライブストリーミング</p> <p>360°全天球映像を、24時間ライブストリーミングできる専用のシステムです。工場内や店舗、展示場やイベント会場のライブストリーミングなどに、様々な場面で活用いただけます。</p> <p>Learn more ></p>
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(Screenshots from the Japanese Ricoh 360 website, which presents a range of business applications domestically for the RICOH THETA camera.)

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Forward-Looking Statements

The plans, prospects, strategies and other statements, except for the historical events, mentioned in this material are forward-looking statements with respect to future events and business results. Those statements were made based on the judgment of Ricoh's Directors from the information that is now obtainable. Actual results may differ materially from those projected or implied in such forward-looking statements and from any historical trends. Please refrain from judging only from these forward-looking statements with respect to future events and business results. The following important factors, without limiting the generality of the foregoing, could affect future results and could cause those results to differ materially from those expressed in the forward-looking statements:

- a. General economic conditions and business trend
- b. Exchange rates and their fluctuations
- c. Rapid technological innovation
- d. Uncertainty as to Ricoh's ability to continue to design, develop, produce and market products and services that achieve market acceptance in hot competitive market

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**Note: In this document, fiscal years are defined as follows:
FY2018 = Fiscal year ended March 31, 2019, etc.**