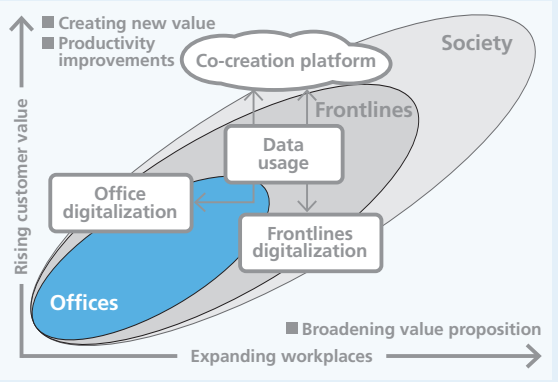
RDS RICOH Digital Services

Business unit role

We leverage robust customer touchpoints by using technology to connect workplaces, extending from offices to remote locations and frontlines. We help customers build digital workflows and streamline business processes.



Message from Business Unit President

RICOH Digital Services provides sales and support in around 200 countries and regions around the world through regional headquarters in Japan, the Americas, Europe, and Asia-Pacific. We are expanding digital services, as a service integrator, by drawing on our global customer touchpoints and strengths in integrating an array of applications, services, and edge devices. We deliver customer value in four key areas. These are IT infrastructure, digitizing workflows, digitalizing frontlines, and new workstyles. We are focusing on strengthening RICOH Smart Integration (RSI), a cloud-based co-creation platform that combines devices and applications to support these areas.

The need for digital transformation in customer workplaces increasingly extends beyond offices to encompass remote work environments and frontlines. We have responded in various ways to such changes in recent years by investing in evolving RSI further. This includes the acquisition of DocuWare and Axon Ivy, global software providers, formed a business alliance with Cybozu, and the acquisition of PFU, and are expanding our services to help our customers digitalize their business workflows.

RICOH Digital Services profits by helping customers around the world succeed. We will offer services that support human creativity in all sorts of workplaces and continue pursuing customer success to accelerate our growth and become more profitable simultaneously.

Akira Oyama
President of RICOH Digital Services Business Unit

CASE STUDY 01

Digitizing workflows to enhance corporate value

DocuWare

Ricoh acquired content service platform provider DocuWare GmbH in 2019. The company serves over 15,000 customers in more than 100 countries.

One of these customers is WSM Personal GmbH, a German mid-sized temp staff agency. The firm recruits personnel from Central and Eastern Europe, primarily for the manufacturing industry.

The human resources services sector is a prolific producer of records. These include employment contracts, vacation requests, and pay stubs. WSM Personal managed all documents from the outset on its own file server. However, they adopted cloud-based DocuWare in 2015 because it became necessary to access documents swiftly, anytime, anywhere. The system now stores 80,000 documents.

Since 2020, they have been working on workflow automation by connecting multiple external systems with DocuWare at the center. Remote signing contract is one example. First, an employment contract created by ERP is emailed to the temporary employee. Then, the e-signature service provided by Validated ID S.L. sends a one-time password text message to the employee's smartphone. This two-step verification mechanism allows for secure and speedy contract signing between different countries without paper or human intervention.

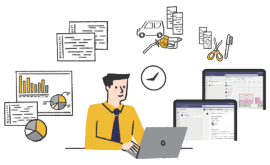
DocuWare has helped WSM Personal to keep evolving its business processes and solidify its position in the human resources services sector.

We boost our process through digitization – DocuWare plays a key role in this. Signatures integrated into DocuWare increases our speed and agility, especially when managing employment contracts in different countries. Without the DMS, we would undoubtedly need more administrative staff.

Markus Maier
Managing Director, WSM Personal GmbH

CASE STUDY 02

Sharing Ricoh workplace innovations with customers



Scrum Assets

RICOH Smart Apps included in Scrum Assets is a suite of business applications linked to Microsoft 365®*. Ricoh responded to the need to embrace telecommuting and other work approaches by commercializing a groupwide communication framework for customers.

The Microsoft Teams®* app streamlines team schedule management, work reporting, and other communications between employees, even when they are at distant locations. SharePoint®* apps combine portal, bulletin board, and other groupware functions.

Customers deploying Ricoh's setup have commented that it has enhanced work efficiency and transformed work in ways they thought impossible.

Around 480 certified "Microsoft®* Solution Evangelists" are offering value-added proposals utilizing Microsoft's®* cloud computing throughout Japan, leveraging their knowledge and experience in coordinating a wealth of customer support services. Ricoh Japan received the Modern Workplace for SMB Award at the Microsoft Japan Partner of the Year 2022 Awards in recognition of these efforts.

We will keep developing products to digitalize operations and help customers grow their businesses.

* Microsoft 365, Microsoft Teams, SharePoint and Microsoft are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

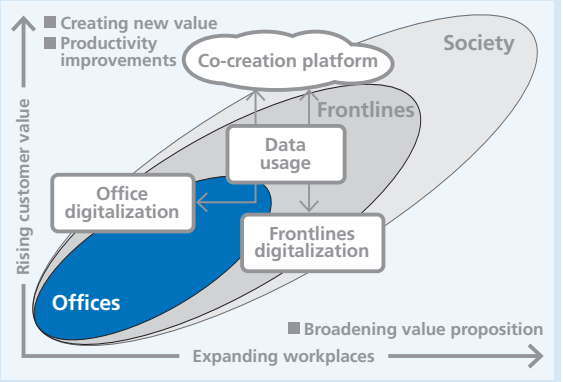
We offer customers nationwide RICOH Smart Apps that constantly update work processes and co-create frameworks to materialize these processes. We will keep collaborating with Ricoh Japan's many customers to design new teamwork practices and contribute to enhancing their job satisfaction.

Shotaro Takano
Group Leader, DX Office, ICT Business Headquarters, ICT Technology Division
Ricoh Japan Corporation

RDP RICOH Digital Products

Business unit role

We support the Group's digital services by developing edge devices that contribute to productivity in customer workplaces, including the frontlines. Offerings include multifunction printers (MFPs), the core edge devices in offices.



Message from Business Unit President

Ricoh Digital Products remains a manufacturing business unit. A key mission is to keep creating and supplying compelling edge devices that enable Ricoh to deliver advanced digital services to customers. We reinforced our manufacturing structure in various ways in fiscal 2021. For example, we established an integrated structure from development through manufacturing and sales to develop and produce our offerings faster and more efficiently. We will continue pursuing operational excellence while striving to expand our business further and capitalize on incremental growth opportunities.

External factors hampered production in fiscal 2021. Among them were shortages of semiconductors and other electronic components and surging raw materials and logistics costs. We must therefore create a manufacturing structure that is impervious to external changes. One effort will be to deploy development methodologies it incorporates into the design plans include measures to tackle potential difficulties in securing parts at the development stages. Another will be to have redundant manufacturing so identical products can be made in multiple plants.

We will collaborate with external stakeholders in these endeavors, such as by jointly developing products with industry peers or sharing modules or plant facilities.

Ricoh's flagship A3 color MFPs are particularly eco-friendly, outperforming the competition in a range of benchmarks, including through energy-saving functions and recycled materials usage rates. We will continue to innovate compelling edge devices that support Ricoh's unique digital services. These offerings will include communication devices whose high-quality video and audio alleviate some of the frustrations of what has become routine teleconferencing since the pandemic struck, scanners that accelerate customer digital transformation efforts, and peripherals that streamline frontlines tasks.

Katsunori Nakata
President of RICOH Digital Products Business Unit

CASE STUDY 01

Analyzing production, logistics, and sales information to understand and resolve issues

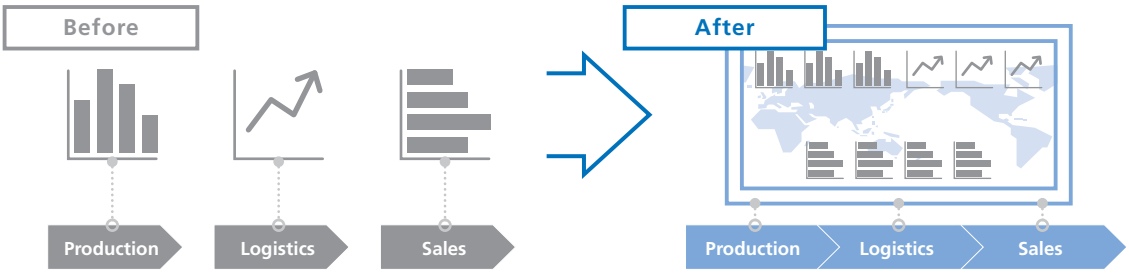
Product logistics monitoring

It is essential to review product supply plans and quickly respond to logistics disruptions caused by recent parts shortages in order to ensure a stable supply of products to our customers. Our production, logistics, and sales departments manage masses of information covering everything from production sites to global delivery. We created a new framework to consistently collect, integrate, visualize, and track inventory levels daily across our entire supply chain. This means we can efficiently monitor supply stability through a single screen.

We also established a setup to analyze operational status, including defect information, sending it in real-time to plants. This setup enables us to swiftly manufacture top-quality products that satisfy customers, slashing after-service times.

We look to share this analytical data with parts manufacturers to build a supply chain that further improves quality.

We also aim to provide these systems to customers.



CASE STUDY 02

Transforming web conferencing

RICOH Meeting 360 V1

RICOH Meeting 360 V1 is an all-in-one teleconferencing device incorporating a 360° camera, microphone, and speakers.

The unit employs proprietary 360° image correction technology that adjusts brightness to optimally show all participants' facial expressions and automatically focuses on the person speaking. The microphone sound pickup technology we honed in developing our videoconferencing system captures audio clearly from considerable distances. We will leverage these technologies to keep transforming web conferencing in the coming years.

We plan a range of additional features, including minutes-taking support, speaker identification, and record searches.

Converting analog audio and video into digital data will help companies resolve various issues and materialize new work practices by making it far more efficient for them to maintain and access information assets.

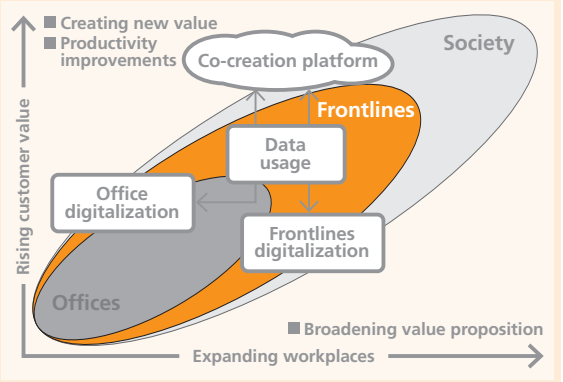
We have tuned the system with a focus on customer usability, such as the sensitivity of the automatic focus switching of the speaker, sound collection from a distance, and the ability to reduce echoes when a speaker's voice overlaps with another person in the web conference.

Kunihiko Nishioka
Development Group I, NED Business Office, SC Business Department
Ricoh Digital Products Business Unit

RGC RICOH Graphic Communications

Business unit role

We support customers in digitalizing their printing sites. We help them transform work practices and expand their businesses by providing digital printing solutions, automating print site production processes, and providing marketing communications tools that integrate paper and electronic media.



Message from Business Unit President

We aim to help commercial, industrial, and enterprise printing customers and brand owners to improve on-site digital transformation and work practice approaches and expand their businesses. We also seek to maximize customer value and resolve social issues.

Specifically, through promoting digital printing, we will offer customers high-value printed materials on-demand that meet their needs, thereby helping them to expand their businesses and reducing their carbon footprint by curtailing mass printing and disposal.

We will help resolve labor shortages by providing workflows that automate and digitalize print production processes and alleviate manual workloads. We will help brand owners expand their businesses by offering marketing communications tools that integrate paper and electronic media.

We developed RICOH Business Booster, a platform for creating value with printers and business partners worldwide to collaborate more with printing sector customers. This platform makes it possible to co-create new printing applications, automate production processes, and support business development. More than 5,000 customers have already become co-creation partners.

We aim to drive customer digital transformation efforts by attentively listening to their needs and solving their problems, becoming a comprehensive partner for Graphic Communications.

Sergio Kato
President of RICOH Graphic Communications Business Unit

CASE STUDY 01

Driving a digital transformation on printing frontlines

RICOH Pro VC70000, RICOH Pro Scanner, and other offerings

The Sattler Media Group is a leading commercial printing company in Germany, producing direct mail, catalogs, and magazines. The catalogs include product information, technical information, manuals, and many other types—some exceeding 400 pages—and are produced in a variety of versions and languages.

In response to Sattler Media Group's need for a highly-automated digital production, the Ricoh Group met the customer's expectations with the Ricoh Pro VC70000, a high-speed digital inkjet that delivers high image quality, high productivity, and support for a wide variety of paper stocks.

Ricoh automated the roll-changing process with the AutoSplicer from Ricoh partner Tecnau SRL. The RICOH Pro Scanner option with this platform leverages artificial intelligence and machine learning technology to automate print-related tasks and maintain consistent quality. This setup has significantly reduced operator workloads.

Investing in digital inkjet technology has helped Sattler Media Group develop an innovation-centric corporate culture. Adopting the RICOH Pro VC70000 and sophisticated automation tools has positioned Sattler Media Group as a trailblazer among German production printing companies and will help them to attract and retain talent.

The RICOH Pro VC70000 and its automation technology have significantly contributed to our business. Ricoh Group is an important partner for Sattler Media Group in promoting digital transformation in the graphics industry.

Arndt-Friedrich Wille
Business Development Manager, Sattler Media Group

CASE STUDY 02

Helping expand digital printing businesses

Printhead Technology

Ricoh agreed to a landmark multi-year printhead technology deal totaling €50 million to extend its successful collaboration with Durst Group AG. Headquartered in Italy, Durst Group AG is a world-leading inkjet printer manufacturer that develops and markets printers, software, and inks with various industrial applications. Strict criteria are used in the selection of printheads, which are ultimately determined by their application suitability and technical performance.

We entered the digital textile market several years ago by supplying printheads to Durst Group AG. Ricoh's outstanding print quality, productivity, and printhead reliability prompted Durst Group AG to use more Ricoh technology in multiple industrial applications across its portfolio. Ricoh will continue to provide new value to customers worldwide by developing and supplying printheads.

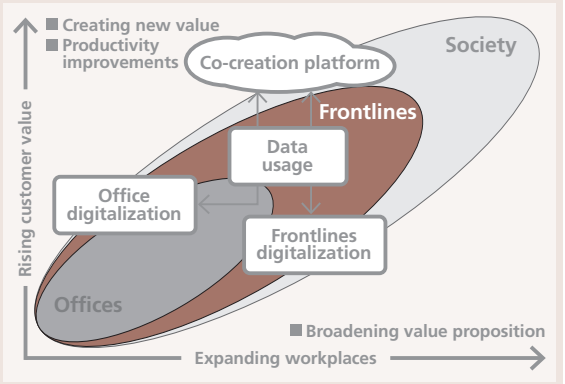
Our deal with Ricoh enabled us to deliver new printers to market faster. Our collaboration with Ricoh has perfected the interplay of printheads, inks and substrates, all optimizing print quality and performance and improving reliability for extended printer life.

Christoph Gamper
CEO and co-owner, Durst Group AG

RIS RICOH Industrial Solutions

Business unit role

We enhance customer productivity by digitalizing customer workplaces in the manufacturing and logistics sectors. We create new value by delivering total solutions that incorporate utilization of data.



Message from Business Unit President

RICOH Industrial Solutions' five businesses all derive from the company's core technologies. The Industrial Media Solutions business uses Ricoh's chemical formulation and coating technology for diazo photosensitive paper. The Precision Components business applies Ricoh's precision processing technology in watches. The Industrial Equipment business utilizes Ricoh's MFPs production technology. The Electronics business harnesses Ricoh's MFPs electrical circuit board design technology. The Optical business leverages Ricoh's camera optics technology.

Each business pursues two strategies under the 20th MTP. One is to expand growth in targeted segments, reinforcing the management structure to maximize earnings. The other is to create digital services that deliver new customer value.

We will mobilize the Ricoh Group's industrial business resources to take on the challenges of digital transformation. We will also integrate Industrial Media Solutions and the other four industrial product businesses to make them key contributors to the Ricoh Group. We will create new digital services by taking advantage of cutting-edge technologies beyond the scope of these five businesses.

We will resolve issues by providing total solutions that integrate media, hardware, and systems while maintaining close connections with customer production sites, delivering fulfillment through work for them and ourselves alike. We will keep pushing forward in this direction with the firm belief that it will enable us to achieve continuous growth.

Yasutomo Mori
President of RICOH Industrial Solutions Business Unit

CASE STUDY 01

In-line high-speed printing solutions to materialize variable information printing

RICOH FC-LDA Printer 500

Variable printing of QR codes*, image data, and text

The RICOH FC-LDA Printer 500 is a high-speed printing solution for production processes. We developed it by drawing on the Group's strengths in optical and thermal printing technologies. Its 192 lasers modulate independently at high speeds to print variable information on-demand at up to 300 meters per minute, a world record for such platforms (source: Ricoh research as of June 13, 2022). We have thus improved print efficiency for food, consumer goods, and other mass-produced offerings while providing variable printing that can change printing content to cater to different customer needs.

Serial numbers and QR codes* are printed on the back of the shrink labels for bottles of Kao Healthya Green Tea Alpha and Healthya Green Tea Umami Luxury Tailoring

Fuji Seal, Inc. was the first company to commercially apply this solution, using it to print unique serial numbers and QR codes* for giveaway entries on the backs of shrink labels on Kao Corporation's Healthya beverages in plastic bottle packaging. This enables Kao to obtain the detailed data needed to serve consumers better. It also helps Kao to innovatively reduce its use of flashy plastic stickers in keeping with its ESG strategy.

By assigning individual product IDs through variable printing, companies can enhance traceability and determine authenticity to bolster food and product safety. They can also leverage this printing for digital marketing, collect more detailed consumer purchasing data, and digitalize processes in the daily necessities, food manufacturing, and retailing sectors. We also take on variable printing challenges for various packaging materials to match customer demands. This allows the acquisition and analysis of detailed data from variable information at many sites. Ricoh will continue exploring ways to add more value to digital services to meet customer needs.

The RICOH FC-LDA Printer 500 won an Encouragement Award in the 14th Laser Society of Japan Industry Award for 2022 for contributing to industrial progress in Japan through laser technology.

* QR Code is a registered trademark of Denso Wave Incorporated

Combining the Ricoh Group's proprietary thermal technology and thermal ink enabled us to offer a technology that can do much to resolve environmental issues. We will apply this technology to traceability and digital marketing and cultivate services that enable customers to adopt digital processes at their work sites.

Nobuyuki Arai
DS Business Development Group, SDGs Business Office, Industrial Media Solutions Marketing Center
RICOH Industrial Solutions Business Unit

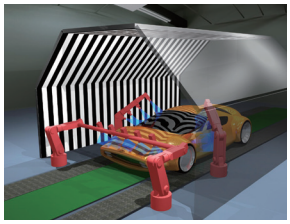
CASE STUDY 02

Helping digitalization of vehicle exterior inspection sites

Vehicle Exterior Inspection Equipment

Our proprietary image capture and processing techniques incorporating time correlation technology have made it possible to automate the inspections of objects with gloss finishes. This process has traditionally been notoriously difficult. Our automatic inspection equipment acquires digital data to enhance product traceability and swiftly addresses the causes of defects. Adopting digital processes at manufacturing sites eliminates two key issues with visual inspection by people. One is differences in inspector skills. Another is the unintentional changes in standards due to the passage of time or fatigue. Digital processes help alleviate inspection process workloads and labor shortages while ensuring consistent quality worldwide.

We are jointly developing the vehicle exterior inspection system with a leading Japanese automaker. This will enable a broader range of inspections by combining our expertise in conventional inspection equipment and automated equipment design technology cultivated over the past half century. The system will be able to capture images when it, or the target vehicle, is moving for far shorter inspection times than with stationary setups.



Vehicle exterior inspection example

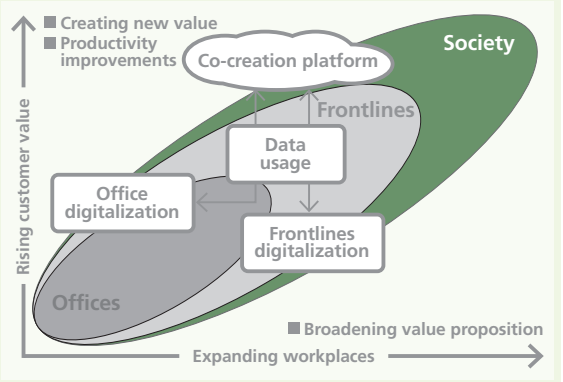
The inspection results can be stored as digital data in the form of images and information obtained from them (defect locations, sizes, etc.), enabling the digitalization of the work site at the same time that the equipment is deployed. As well as visualizing facilities operations and quality, we are building digital services that identify defect causes by feeding back inspection results to upstream processes. This will contribute to better production efficiency through process improvements.

We also look to expand our vehicle exterior inspection equipment business to overseas markets to achieve business growth.

RFS RICOH Futures

Business unit role

We create new businesses and value for tomorrow by innovating to resolve social issues. We also help improve the quality of life and contribute to a decarbonized, circular economy.



Message from Business Unit President

RICOH Futures is striving to create future value through incubation initiatives that help resolve social issues. We aim to create a business structure whose growth leads to a better world.

I believe there are three elements businesses to be viable. First, it must benefit the world. It must be able to help resolve social issues, and draw on a solid, consistent, and ongoing commitment to such progress. Second, corporate strengths are essential and without that strength one cannot generate value. Building a business model using one's proprietary technologies, patents, and other intellectual property are important to resolve issues in an ever-changing world. Third, co-creation is essential to resolving issues because there are limits to the value that a single company can generate. I believe you have to be able to formulate rules for expanding business with co-creation partners. Organically linking these three elements is vital to establishing a business.

We have a certain way of achieving these goals. That is being a thinker, rather than a doer. In order to create and grow new businesses, our employees must be "doers" who act independently. All of us at Ricoh Futures are committed to practicing "doer" behavior to resolve social issues and create value for our customers.

Takahiro Irisa
President of RICOH Futures Business Unit

CASE STUDY 01

Leveraging 360° camera and images

RICOH360 Service

We provide services leveraging the RICOH THETA camera and its 360° images that tackle people's need to communicate while maintaining social distancing and overcoming a shrinking workforce. Companies in the real estate and tourism sectors use THETA360.biz 1 and RICOH360 Tours, a virtual tour production service. Construction industry players use RICOH360 Projects to transform work by making it possible to seamlessly capture, organize, and share 360° images of onsite conditions. We will draw on our unique strengths in developing cameras and digital services to deliver higher-value-added services that employ 360° image data and the artificial intelligence of RICOH360 image processing API (application programming interface).

The Condominium Business Division of Daiwa House Industry Co., Ltd., Japan's biggest homebuilder, adopted THETA360.biz in February 2020. In addition to the floor plans, the company is also using VR staging to create attractive spaces by decorating 360-degree images with furniture and accessories using computer graphics technology, in addition to providing a virtual tour of the view from balconies.

Salespeople across Japan take advantage of easy use of photography using the RICOH THETA. THETA360.biz is very user-friendly, making it simple and swift to create content and helping to streamline tasks. Our website presents virtual tours for condominiums for sale, in email responses to inquiries, and in other approaches salespeople take to serve those unable to visit locations in person because of the pandemic. Salespeople around Japan frequently ask for virtual reality-based staging support, as it makes it easier for them to show what properties will look like after people move in. Another advantage of this staging is that it can customize furniture styles according to family and price ranges.

Tomohiro Kishishita
Condominium Business Division
Daiwa House Industry Co., Ltd.

WEB Refer to our website: 1 THETA.biz

CASE STUDY 02

Enhancing social infrastructure safety by visualizing road status

Road surface inspection system

It has become increasingly important to maintain and manage public infrastructure, given incidents from aging, heavy rainfalls, and other natural disasters. It requires a lot of labor and time, making it a major social issue in Japan.

The inspection of roads, tunnels, and slopes by making it possible to use regular vehicles fitted with proprietary photographic systems that capture images while driving, digitizing these images. Artificial intelligence platforms analyze the data to assess the damage and output various reports. We brought out the Ricoh Road Monitoring Service in 2019 and launched the Ricoh Tunnel Monitoring Service in 2020. In February 2022, we began jointly testing the Roadside Slope Monitoring System with Miyazaki Prefecture, Japan.

We will contribute to preventing accidents and disasters by leveraging digital technology to streamline inspections, pinpointing high-risk areas needing urgent repairs. In coming years, we will link an array of data to undertake multifaceted inspections, enhancing the safety and security of public infrastructure by precisely identifying signs of deterioration and linking the information to undertake the right disaster prevention measures.


Vehicle fitted with road surface inspection system


View of tunnel interior


Image of slope surface