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The Magazine from SIX

## Girls and IT Programmed Career Success

The Girls 4 IT Day hosted by SIX gets schoolgirls enthusiastic about coding. Page 24

## **The Swiss Stock Exchange**

## Sometimes, You Really Can't Get Enough of a Good Thing.

When quality comes as standard, it makes all the difference.

When you're looking for best execution in Swiss equities, the quality of our order books is what gives you the edge. And, as the clear reference market for all SMI shares, the Swiss Stock Exchange gives you the highest liquidity, the best prices and the tightest spreads.

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six-group.com/trading

### Focus Investing with ESG Data

Alternative data is extolled today because it enables investors to value companies also on the basis of nonfinancial aspects. ESG data, for example, makes the sustainability and societal impact of an investment measurable.

#### 4 Impulse Interview: Financial Information

Marion Leslie, Head Financial Information at SIX, talks about how the data business has changed.

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SIX offers a wide spectrum of education in the capital market field.

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Thomas Wellauer takes up his office as Chairman of SIX.

- 24 Girls and IT At the first Girls 4 IT Day, hosted by SIX, around 40 schoolgirls learned how to write code.
- **30** Future Talk: Tokenization of Art Conceptual artist Kevin Abosch meets Juan Dominguez from the investment platform Maecenas.



## Passport for Data

Regardless of whether it is reference, corporate-action, or pricing data, banks seek assurance about the provenance and traceability of data. Why should financial institutions not make use of a "data passport" to trace the journey of data back to its origin?

## 20) IPO for Visibility

SoftwareONE went public in 2019. One goal of the supplier of end-to-end software and cloud solutions was to further elevate its global profile. Thanks to a fast and uncomplicated listing procedure and access to large pools of capital, the Swiss Stock Exchange was the right place for the IPO.

## 4 New Talent for IT

Coding is more than mathematics. At the first Girls 4 IT Day SIX playfully introduced schoolgirls to information technology. With the help of bits and bytes, they made drones fly and robots blink.

## Data Is the Fuel of Financial Markets

**Impulse Interview: Financial Information** Marion Leslie has headed the Financial Information business unit at SIX since the start of 2020. In this interview, she talks about how the data business has changed during her career, what the future holds, and what opportunities this presents for SIX.

Interview SIX

#### You've been specializing in financial information for some time. What has changed the most over the years?

Marion Leslie I took my first steps in the financial market data business as a data analyst at Refinitiv, collecting data on the Swiss, Austrian, and German bond markets. A job in data was not really understood back then, let alone seen as an attractive career path. I never thought that this experience would be the starting point of an international career. Today, skills in data are highly sought after across all sectors as all companies strive to use their data assets to improve their performance.

Data is particularly important for the financial markets. It's the fuel that drives them. Without data there's no trading, no investment, no risk management, and no compliance. Where data and technology meet is where the magic happens. Data science, discovery and exploitation of new data sets, digitization, artificial intelligence, and machine learning will transform our industry.

#### What role does SIX play in this ecosystem? It makes no sense for each and every financial institution to source the same data multiple times over. While SIX takes care of providing well-connected data and valuable insights, our clients can concentrate on their core business. As one of the world's leading providers of financial data, we're an essential link in the global

Our clients are under cost pressure, but need to innovate, digitize their businesses, and meet new customer demands. It's our role to provide frictionless data services that enable them to do that, and we're in an ideal position to do so. SIX helps financial institutions to better serve their customers, assess risk, and enhance returns.

financial value chain.

Marion Leslie In January 2020, Marion Leslie assumed the role of Head Financial Information at SIX. Previously, the British-Australian dual citizen had worked for 25 years at Refinitiv, formerly Thomson Reuters, in various business areas and leadership posi-tions. In her last role, Leslie managed that company's enterprise business, which included delivering real-time data feeds, analytics, data management, and distribution platforms. She also spent four years in Bangalore, India, platforms. She also spent four years in Bangalore, India, where she built Refinitiv's operational data business with 5,000 staff from the ground up. Leslie holds a post-gradu-ate certificate in education in French and German from the University of Cambridge. She was nominated in the She was nominated in the Cranfield University Female FTSE 100 Women to Watch Board Report in 2017, and in 2014 she won the Award for Achievement at the Women in Achievement at the Women in Banking and Finance Awards.

### How important is alternative data in this (see also the focus topic on page 12)?

With increasing investor demand for ethical investing and with the progression of data science and innovation, there is no dispute that alternative data, especially ESG data, will continue to gain importance. However, it is important that this data is connected to core reference data. Otherwise, it's meaningless and leads to data scientists who are busy cleaning data rather than analyzing it.

The cost of managing data is four to eight times that of acquiring it. So, it's no wonder companies are continually looking for more efficient ways to make greater use of their data assets. By providing data that's relevant to our clients' business operations, we prevent data scientists from becoming data janitors.

### What goals have you set for your first year at SIX?

I have three goals: to improve customer satisfaction, to boost our performance, and to develop a growth strategy based on our solid

"While SIX takes care of providing well-connected data and valuable insights, our clients can concentrate on their core business." foundations. We'll build on our great partnerships with our clients, our comprehensive datasets, and our world-class expertise. The key to delivering even better services and support to our clients is the SIX Spirit – our culture and values – as well as our focus on innovation, service, quality, and compliance.

#### "Build on comprehensive datasets." Can you elaborate on that?

A client recently told me that high-quality data was the core of her business. She said she couldn't use the data if it wasn't rock-solid. I totally understand. Without great data, you don't get great answers. We cannot take our eyes off that. And as data gets used in new ways, we need to understand that the definitions of "quality" and "fit for purpose" will change. Data science uses data on a scale that tests it to its core. This is completely different from more traditional use cases for data.

By way of another example, regulators are holding financial institutions to account for the quality of the data used for regulatory reporting. They expect them to have a good understanding of the origin of the data. So it's not surprising that we're seeing so many more Chief Data Officers.

#### Why is the origin of the data relevant?

The concept of data lineage is becoming ever more important. Data gets manipulated as well as transformed many times, and the financial crisis has moved the focus on effective risk management as well as data governance.

In a survey we conducted, almost twothirds of the companies said poor data quality was a big problem. This is a staggering finding considering how fundamental data quality is to the day-to-day running of financial markets.

Financial institutions are in need of a "data passport" [see also box on page 7] to provide accreditation for the quality of the data and to track the journey of the data back to its origin. We at SIX believe that the provenance and traceability of data have never been more relevant.

The need for reliable regulatory data has exploded in recent years. How do you see this trend affecting SIX in the future? Clients have told me that they appreciate the work SIX has done to stay ahead of regulations and to provide compliance services. We are proud of the leading role we've taken in

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#### "The provenance and traceability of data have never been more relevant."

interpreting new regulations and allowing our clients to manage them seamlessly and with confidence.

Every new regulation results in new data requirements. We make sure we understand those requirements, and integrate the data fields needed into our services, easing the workflow and reducing overhead costs for our clients.

The data business has a global reach. How important is the Swiss quality label? Reputations are slowly built and quickly lost. We work hard to maintain our reputation for quality services that are mission-critical to our clients. We know it's a real differentiator.

As a global business, we can only lay claim to the Swiss quality label by delivering a high-quality data experience, no matter where our clients are. To do that, we have to be clear about what our clients really need and expect. They're at the center of everything. We'll continue to make it our mission to help them innovate, stay compliant, and increase customer value through data.



A Passport for Financial Data

#### Straight from the Cow's Mouth

Nobody would travel with an expired passport, or without any passport at all – not even certain Swiss cows. So why should the world of finance be any different?

Did you know that in Switzerland certain cows have a passport? It is reserved for suckler cows and requires compliance with guidelines that are significantly higher than the Swiss Animal Welfare Act. In addition to origin and descent, the passport also declares how the cows are kept and fed. Is it an expensive purebred animal? Did the animal have regular outdoor access? Was growth-promoting food omitted? These and other questions can be answered by a simple online query.

But what about the financial industry? Can a financial institution be 100% certain about where its data comes from? Does it really know what other data has been linked to the original source and who has edited it? Regardless of whether it is reference, corporate-action, or pricing data, banks seek assurance about the provenance and traceability of data. This is essential for them to confidently increase their growth and performance, minimize their risks, be compliant, and protect their reputation.

#### **Poor Data Quality as Impediment**

As they navigate through the increasing complexity of modern-day markets, financial institutions are at great risk of acting on outdated information. In this context, it doesn't help that many companies are still far from knowing their way around their data. In a survey that we conducted with data management executives at 15 financial institutions in Europe and the USA, 60% of the respondents said that poor data quality – inconsistent data, for example – was a major impediment.

But there is no need for financial institutions to shoulder the burden of poor data. Perhaps the financial industry should take a leaf out of the farmers' book. Why should financial institutions not make use of a "data passport" to trace the journey of data back to its origin? Key to this is making data completely digitized. It needs to arrive in a format customized to companies' requirements to enable it to be integrated easily into their workflows.



→ Read all about how SIX is pursuing the concept of a "data passport" in our new brochure on reference, corporate action, and pricing data: six-group.com/data-passport



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## SIX Does It with Class(es)

SIX offers a wide spectrum of education in the capital market field. Through these programs, traders and reporting agents, for example, gain the requisite skills to execute their tasks flawlessly on the Swiss Stock Exchange. Back-office bank employees, for instance, gain insights into subjects such as clearing and settlement of securities transactions, and corporate actions.

But increased customer demands, growing regulatory requirements, and changing financial markets also require continuous advanced training. SIX imparts current and practical knowledge in a compact form. The training programs offered by SIX include recertifications for bank client advisors accredited by the Swiss Association for Quality (SAQ) and courses that form part of advanced training toward becoming a qualified independent wealth manager under the guidelines of the Swiss Association of Asset Managers (SAAM).

A half-day trading simulation is open to professionals in any occupation. Experience a live trading session in fast-forward mode in the shoes of a floor trader or market maker and gauge your performance.

→ More information: six-group.com/education

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#### The Date

#### 28 October 2020

The **DA Z digital arts festival** devotes four full days to exploring the intersection between art and new technologies such as augmented reality and blockchain (see also page 30). SIX is a main sponsor of the festival in Zurich, which is taking place for the first time.



More information: da-z.net

#### The Head / The Count



### 5,000 Submissions per Day

#### **Markus Gutzwiller**

Head Sales CONNEXOR, SIX

The manual processing of reference data is a slow and complex task that is prone to error. But thanks to the CONNEXOR platform from SIX, structured products in particular can already be traded the day after they're entered by their issuer. CONNEXOR was still in the project stage when Markus Gutzwiller joined SIX in late 2008. The platform launched on the market in 2009, shortly after he had taken over the team's helm as Head Issuer Service. The objective, he says, was the same then as it is today: "Automated, standardized, cost-efficient management of reference data." And it worked – what used to take days is now a

matter of hours or even less. The number of participants is growing each year. On average, they generate 5,000 new product submissions per day. Services like **CONNEXOR** contributed to the Swiss Stock Exchange winning the accolade of "Best Structured **Products and Derivatives** Exchange" at the SRP Europe 2020 Awards. Today Gutzwiller focuses more on client acquisition and is delighted about entering the Asian market.

> → More information: six-group.com/ connexor

#### The Problem: A Missing Overview of Cyberrisks

Cyberrisks can endanger an entire company. Granular risk control is therefore indispensable. A chief information security officer needs to keep a complete, holistic overview of the potential risks. But is that even possible at all? Everything that the company, its deployed technology, and its employees working with that technology do leaves digital footprints: locally but also across national borders if a company operates in multiple countries, and internally but also externally in the course of cooperation with suppliers and partners. Under certain circumstances, external cyberrisks can pose a greater threat than internal ones. Companies have only limited control over the security measures implemented by their partners and suppliers, but may bear co-liability.



#### The Solution: Digital Risk Monitoring by SIX

Digital risk monitoring by SIX takes organizational, technological, and human aspects into account. Round-the-clock surveillance keeps companies informed of their digital footprints at all times. A dashboard provides an overview of all internal cyberrisks (Enterprise Risk Monitoring) or, upon request, also of external ones (Third-Party Risk Monitoring). A risk rating enables your enterprise to assess the threat situation facing its IT infrastructure, and a risk benchmark enables a comparison against other market participants.





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The Picture The third season of the award-winning TV series Babylon Berlin - currently being broadcast by Sky Show - begins with the great stock market crash in the late 1920s. The fire that burned down the Berlin Stock Exchange in 1944 caused a lot of historical knowledge about stock trading in that era to go up in smoke. But the film makers, who seek to capture authenticity, found a capable consultant in the person of Andrea Weidemann, the director of the Swiss Finance Museum. SIX has operated the museum on the premises of the SIX Swiss Exchange building since 2017.





Read the summary or download the complete white paper: six-group.com/future-money

The Insight

## There Will Be Cash in the Future

More and more people pay for taxis, shopping, or a cup of coffee with an app. At the same time devices become ever smarter thanks to the Internet of Things (IoT). Banks are required to open interfaces to their digital vaults and customer data (open banking), which allows third parties to launch their own services and products and to develop direct relationships with bank customers. Central banks are considering creating digital currencies on their own.

The SIX white paper Future of Money from the series Picture of the Future examines these dramatic changes affecting money: What means will be used for payment or as a store of value in future? What will be the role of banks and central banks? What infrastructure will be required? The white paper shows seven scenarios for a period of five to seven years and ranks them according to probability. The most likely scenario for the experts at SIX is a fragmented world where "digital" rules the day, but cash persists.

#### **ESG Data**

## **A Better View of** the Big Picture

Alternative data enables investors to value companies also on the basis of nonfinancial aspects. ESG data, for example, makes it easier to invest in accordance with sustainability criteria – a hot trend at the moment.

Text Simon Brunner

usinesspeople who speak about social responsibilities are "unwitting puppets of the intellectual forces that have been undermining the basis of a free society." No, this is not a quote from a raving presidential tweet; it is 50 years old and demonstrates that the debate about

corporate social responsibility is nothing new. At the same time, it illustrates just how fundamentally the mood has changed. An economist who wrote something of that kind today would hardly stand a chance of winning a Nobel Prize like Milton Friedman did years ago. The quote above comes from his essay titled The Social Responsibility of Business Is to Increase Its Profits.

Various criteria have always had to be taken into consideration when investing money, but in the past it was mainly the financial return that stood in the foreground for everyone from retail investors to billion-dollar pension funds. Today that no longer universally applies, as evidenced by headlines and comments in recent months. Goldman Sachs, for instance, declared that it would no longer underwrite IPOs for companies with all-male boards of directors. State Street Corp.'s investment unit, in turn, plans to vote against the boards of major corporations that lag behind on sustainability standards. BlackRock

Chairman and CEO Larry Fink even went as far as to write that "we are on the edge of a fundamental reshaping of finance" in his influential annual letter to chief executives. "In the near future – and sooner than most anticipate," he continued, "there will be a significant reallocation of capital." Lastly, the Harvard Business Review trumpeted nothing less than an "investor revolution."

Sustainability investing is experiencing an unprecedented boom. The business magazine Forbes writes that the total volume of sustainability-linked investments is estimated to exceed USD 20 trillion, which equates to one-quarter of all assets under professional management worldwide. Sustainable assets feature different target attributes such as "impact," "sustainable," "value-based," "mission-driven," or "green," to name just a few. The abbreviation ESG, which stands for Environmental, Social, and Corporate Governance, has taken root as an umbrella term. The objective of ESG is to make the sustainability and societal impact of an investment measurable.

The ESG concept came to public attention in 2004 via a United Nations report bearing the catchy title Who Cares Wins. Kofi Annan, the UN Secretary-General at that time, invited the CEOs of the world's 50 largest finan-



#### **The Overview Effect**

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The astronauts of the Apollo 8 mission in 1968 were the first humans to ever gaze upon planet Earth in its full splendor. They described the supernatural change of perspective as a transformative experience. All of the space voyagers that have followed them, aboard the International Space Station, for instance (see photo), reported undergoing the same experience. They say that the view from above jarringly reveals the fundamental interconnections of life on Earth and the fragileness of our planet, and manifestly exposes the need for sustainable behavior. In the late 1980s, Frank White called this phenomenon the "overview effect," coining the term with his book of the same title.

A holistic way of thinking, a sustainable outlook – investors, too, are increasingly calling for an overview of this kind, as the ESG example shows. Alongside conventional financial data, ESG investing also makes use of alternative data, which can come from anywhere: e.g. from social media, sensors, your smartphone, or – completing the orbit – even from outer space. The satellite images on the following pages invite you to change your perspective.



cial institutions (21 ultimately participated) to create a framework for integrating ESG criteria definitions into capital markets. Their closing report, which was co-financed and co-published by the Swiss Confederation, summarized their findings.

So, does this mean that everything is in place to facilitate sustainability investing? No. The biggest challenge today lies in valuing companies by ESG standards. And that's not a trivial task, as the *Harvard Business Review* puts it. The universe of ESG data, it writes, still feels "like the Wild West," though substantial progress has been made in improving the quality and availability of ESG information.

#### A Booming Asset Called Data

It is questionable whether this Wild West will soon be tamed. But there's no question that it will change to a great extent: Data availability, at least, will no longer be a limiting factor. The quantity of ESG data will increase exponentially, just like the ranks of data providers will proliferate. These forecasts were put forth in a white paper titled Data, the Future of Financial Information that SIX recently published (see box). It examines the spectacular growth of the booming asset called data, with a focus on the financial industry. For the world 10 years from now, the authors of the white paper come to the conclusion that "besides the centrality of data, it looks as if nothing will look like the past."

The biggest change concerns the aforementioned growth in the vast quantity of data, particularly in the area of alternative data, which differs from traditional financial data such as revenue, earnings, debt load, outstanding liabilities, etc. that companies disclose themselves as part of their reporting. Alternative data, in contrast, is usually not financial data, but instead relates to things like traffic, the weather, communication, or energy consumption, for example. Alternative data can originate from a wide range of different sources such as social media, satellite imagery, road and transport users, and sensors. It contains information that is either interesting in itself or which enables a reanalysis of already existing data.

Sound abstract? Consider a concrete example: Foursquare is an app that lets users virtually "check in" at locations where they happen to be, such as at an airport or a restaurant. A couple of years ago, the CEO of Foursquare pretty accurately predicted the quarterly revenue figure for a restaurant chain. Its reported 30% slump in sales had already been portended by the behavior of the app users.

This example illustrates why people in the financial world are extolling the virtues of alternative data today. Alternative data, *The Economist* writes, harbors the potential to balance out the knowledge advantage



#### White Paper from SIX

#### Data, the Future of Financial Information

The SIX white paper Data, the Future of Financial Information from the series Picture of the Future examines the spectacular development of data. The central questions are: On what data basis will investment decisions be made in the future? In what form will data exist and be used? What infrastructure will underlie it? These issues are discussed and analyzed in the context of the rapid development and spread of digital assets, data sovereignty shifting to data subject, increased demands for the protection of privacy, increasing consideration of sustainability and social impact, technological advances in privacy-preserving systems, fake data, powerful AI systems, increasing cybercrime, and a general decentralization of data. SIX presents the future in five scenarios, sorted by probability of occurrence.

In the most likely of five scenarios for the year 2030, people have greater freedom, rights, and ability in their capacity as asset owners, and as investors: The number of investable assets has exploded and ranges from seats at a restaurant to a share of a student's future income. And data will be assets too. Producers of personal data, for example, can prevent service providers from processing their data and can provide third parties with access to their data instead.

Alternative, decentrally collected data like this will also be a deciding factor in investments – for example as ESG data.



More information: six-group.com/future-data



All of the imagery was photographed by NASA's Landsat 8 earth observation satellite between 2016 and 2020



Asia: Eddies of warm water in Lake Baikal have formed a ring in the ice sheet.



Africa: The Namib Desert's sea of sand is bounded by the bed of the Kuiseb River.



North America: Baffin Island is the world's largest nesting site for snow geese.



Australia: The seasonal rains and a cyclone have left rivers swollen and wetlands flooded in Queensland.



Europe: The Jökulsárlón glacier lagoon in Iceland has guadrupled in size since the 1970s.



South America: The Juruá River is one of the most sinuous rivers in the Amazon basin.



that corporate insiders have over normal investors. You can read in blogs how "you can beat the DAX" using alternative data, and Swiss private bank Pictet calls alternative data "the key to achieving greater alpha in the future." And financial market researcher Optima estimates the value of the market for alternative data at already USD 7 billion for 2020.

#### **Customized Sustainability Indicator**

Alternative data will become especially important for compiling ESG information. "The biggest obstacle to investment is that most sustainability reporting by companies is aimed not at investors but at other stakeholders." the Harvard Business Review writes. ESG data has heretofore been missing in most corporations' quarterly and annual reports, not because companies don't want to disclose this

information, but because they simply don't or are unable to collect ESG data.

This constraint will disappear. The white paper by SIX envisages a world in which the guantity and depth of information know practically no limits, enabling investors to arrange their investments in alignment with their personal preferences. One investor perhaps might want to invest only in companies that vigorously promote gender equality, whereas another investor wishes to take action on environmental protection and climate change. Other investors perhaps would like to shun weapons manufacturers or coal companies.

"With increasing investor demand for ethical investing and with the progression of data science and innovation, there is no dispute that alternative data, especially ESG data, will continue to gain importance," says Marion Leslie, Head Financial Information at SIX (see interview on page 4), stressing that "however, it is important that this data is connected to core reference data. Otherwise it's meaningless."

Back to Milton Friedman, the Nobel laureate in economics who opined that companies have only one responsibility: to create value for shareholders. Perhaps in some circumstances the American economist wouldn't actually have been so fervently critical of ESG as one might think. After all, a number of studies show that companies that adhere to ESG criteria systematically outperform those that don't. Former Bank of England Governor Mark Carney stated it a bit more radically: "Businesses that fail to adapt to climate change will go bankrupt."

The QR-bill is about to transform payment transactions in Switzerland. It will be introduced on 30 June 2020 and will completely replace today's payment slips after a transition period. Established features will be retained – the QR-bill, for example, will continue to consist of a payment part and a receipt. A new feature is the Swiss QR Code that contains all of the relevant payment information, which means no more typing in account and reference numbers. That speeds up invoice paying and reduces sources of errors.

## What Benefits Does the New QR-Bill Have?

#### Four Ways to Pay QR-Bills



#### Via E-Banking

Scan the QR code into your e-banking portal with a QR reader or PC camera.

Pay with a click.



#### Via Mobile Banking

Scan the QR code with the banking app on your smart-phone.

Pay with a tap of your finger.

#### Swiss banks will punctually adapt their e-banking and mobile banking solutions by the 30 June 2020 rollout date.

## Via Post Office

Pay the QR-bill at the counter of a Swiss Post branch or mail it in an envelope to your bank as a payment order.

Pay the same way as before.



#### **Via Business Software**

Scan the QR code with a QR reader. Your business software assigns the invoice to the appropriate account payable.

Pay automatically.

Businesses with proprietary accounts payable processes must adapt the associated software, hardware, and master data by 30 June 2020.

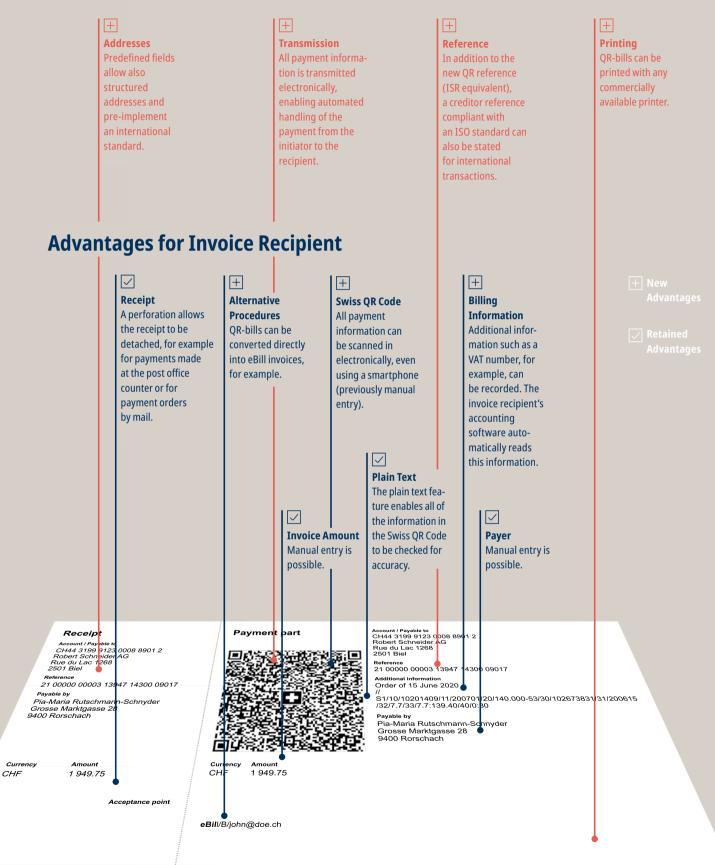


 Contact your service provider today.
More information: paymentstandards.ch



→ Contact your bank today to register for e-banking. More information: pay-simple.ch

#### **Advantages for Invoice Issuer**





CFO Hans Grüter (second from left) celebrates SoftwareONE's IPO together with the company's executive board (left) and members of its board of directors (right). CEO Dieter Schlosser and Chairman Daniel von Stockar seal the historic day with a handshake.

## The Birth of a Listed Company

#### **IPO on the Swiss Stock Exchange**

SoftwareONE, based in Central Switzerland, went public on the Swiss Stock Exchange in 2019. CFO Hans Grüter recounts the exciting and emotional time.

#### Text Simon Brunner

he moment arrived on 25 October 2019. At exactly 9:01:29 a.m., the four letters SWON scrolled across the big board of the Swiss Stock Exchange for the very first time. That ticker symbol belongs to SoftwareONE, based in Central Switzerland, a world-leading supplier of end-to-end software and cloud solutions that operates in 90 countries. SoftwareONE opened at a price of CHF 18.00 per share and an IPO market capitalization of CHF 2.85 billion. How did the CFO of SoftwareONE experience the initial public offering? "The emotions were akin to what one feels at the wedding or birth of a daughter or son," says Hans Grüter, a father of two. "I view SoftwareONE as our baby that has now grown up."

SoftwareONE's initial public offering was one of seven new company listings on the Swiss Stock Exchange in 2019, marking a continuation of the positive trend in recent years registered by exchange operator SIX. "SoftwareONE shows that we are an attractive stock exchange also for the IT industry," Jos Dijsselhof, CEO of SIX, says. "The IT sector is fundamental to innovation and economic development." Grüter confirms that "SIX provides an attractive trading venue for tech companies." The CFO adds that "there is a good investor base and vibrant investor demand here."

#### Advantage Switzerland

Grüter always knew deep down that Software-ONE would list in Switzerland: "We're a Swiss company headquartered in Stans, our founders and many members of our executive management team are Swiss, and they adhere closely to Swiss values. Swissness is part of our DNA."

"There are many good reasons to go public on the Swiss Stock Exchange," explains Valeria Ceccarelli, Head Primary Markets at SIX. "To start with, the Swiss Stock Exchange provides access to large pools of capital." Assets totaling more than CHF 6 trillion are managed from Switzerland, and Switzerland is the world leader in global cross-border asset management, with a market share of around 25%.

Measured by the free-float market capitalization of its listed companies, the Swiss Stock Exchange is one of the largest securities exchanges in Europe. Ceccarelli, who has been involved in around 40 company listings, cites the high visibility and raising of a company's profile as another selling point. A listing on the Swiss Stock Exchange is a statement for transparency, she says. Moreover, the resulting concentration of coverage by financial analysts raises a lot of attention among investors and the media, she adds. SoftwareONE is a good example of that. "One goal of our IPO was to further elevate our name recognition, visibility, and global profile," Grüter explains. "Prominent visibility is a huge advantage," he says, because "attention leads to new customer contacts."

#### **Countdown to IPO Day**

The regulatory requirements from SIX Exchange Regulation meet the strictest international standards. Nonetheless, the Swiss Stock Exchange is market-oriented, Ceccarelli says. The listing procedure is fast and uncomplicated, and a listing application can be approved in just four weeks. Grüter concurs: "Access to the regulator was definitely important to us." SIX supports companies with comprehensive services throughout the entire process. "We felt very welcome," Grüter says. "The communication with SIX was straightforward, good, and trustworthy."

SoftwareONE spent years preparing for IPO day. One example that Grüter cites was broadening the shareholder base and strengthening SoftwareONE's balance sheet, but always in alignment with the company's traits because "it's essential for a company to stay true to its DNA. The IPO should mark a further chapter in the company's ongoing unique success story." "A very intense summer got underway" around six months prior to the IPO, Grüter says. He recalls experiencing that period as being very time-consuming, but also very exciting. The team grew closer together and learned a lot more about itself through the questions posed by investors, he recounts.

The IPO enabled incumbent investors to cash out part of their holdings and made it

25 October 2019: The letters SWON debut on the big board of the Swiss Stock Exchange.



easier for SoftwareONE's 5,300 employees to acquire an equity interest in the company. Employees taking an ownership stake is important for the corporate culture and solidarity, Grüter says, because "it strengthens mutual interests."

Now that shares of SoftwareONE trade publicly, strict rules apply to corporate reporting, and the company must communicate more with investors. That means more work for the CFO. Is that a burden? "No." The dialogue is fascinating and instructive, Grüter says. "Good investors challenge you and help you to sharpen your focus and spot potential for improvement."

Grüter, who has been with the company since 2014, always kept an eye on the stock-market price during the early post-IPO stage. Volatility subsequently diminished, and the CFO could transition back to routine dayto-day business.



→ More information: six-group.com/going-public

#### IPO Trophy

#### Having a Bell

An initial public offering marks a very special day, as SoftwareONE CFO Hans Grüter evocatively describes in the adjacent article. SIX presents an IPO Trophy to companies newly listed on the Swiss Stock Exchange as a memento to commemorate the special occasion. The IPO Trophy is being redesigned this year. It's a smaller version of the Swiss cowbell that rings out the opening of every IPO. Pop-art artist Fredinko will paint each bell with a unique design. Fredinko has gained fame through his live performances, during which he lets his spectators color in his giant sketches. He works out of Zurich for national and international companies – a profile that fits in perfectly with the Swiss Stock Exchange.



 More information: fredinko.ch Thomas Wellauer, Chairman of SIX, is on his way to the company's headquarters in Zurich-West. Today is his first official day on the job. Over the past several weeks he has already received insights into ongoing projects and has gotten acquainted with the corporate culture and numerous employees at SIX.

Together with the Board of Directors and the Executive Board of SIX, Wellauer especially wants to seize growth opportunities arising from the evolving financial industry environment and the digital transformation, but without losing sight of the *raison d'être* of SIX: quality, reliability, and stability. He views SIX as being well on track in those regards.

Wellauer has enjoyed a long, successful career in a number of industries. With his broad business knowledge, he will strategically support SIX in providing products and services with distinct added value for clients and in creating and efficiently implementing innovations.



1900

Hardbrücke Train Station Zurich, Switzerland

16 March 2020 8:10 am

7 °C Humidity 60% Sunny, scattered clouds

Dr. Thomas Wellauer Chairman, SIX

THE

## The Code to a Career in IT

**Girls and IT** In February 2020 SIX hosted its inaugural Girls 4 IT Day. Around 40 schoolgirls learned about career opportunities and became acquainted with coding at the SIX headquarters in Zurich.

#### Text Claudia Holfert



faint buzzing sound can be heard. It gradually gets louder, and suddenly the source of the noise becomes visible. A tiny drone has lifted off and is flying around the room, steered by Juliette via a computer: upward, downward, from left to right, and even upside down. But "steering" isn't quite the right word in this instance. Behind the aerial maneuvers lie lines of code that Juliette just learned how to write minutes earlier. "This is really cool. Never would I have thought that you could do so many fascinating things with IT. I had always thought that IT meant spending most of your time sitting and staring at a computer screen," the 13-year-old student says. Juliette is one of around 40 schoolgirls who participated in the inaugural Girls 4 IT Day hosted by SIX in February 2020.

Dalith Steiger, one of the speakers at the Girls 4 IT Day, affirmed that it had also taken her time to gradually realize the vast array of opportunities that IT presents: "If you had told me as a young girl that I would do something someday with IT, I probably would have shaken Around 40 girls spent a full day at SIX learning about IT.

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my head in disbelief." Today the mathematician and computer scientist ranks among *Bilanz* magazine's Top 100 Digital Shapers in Switzerland. *Enterprise Management 360* lists her as one of the Top 10 Pioneering Women in AI and Machine Learning. "Information technology is a universal language and opens up opportunities everywhere," she sums up in conclusion, reassuring the students that "if you run into a wall somewhere, a new pathway into IT opens up somewhere else. Even my math grades, for example, were sometimes catastrophic."

#### **Different Professional Backgrounds**

Besides Dalith Steiger, other expert women spoke to, and took questions from, the students as well. Marisa Tschopp spoke about her research on artificial intelligence, and Claudia Zeuren gave the young audience a taste of her passion for cyber security. Zeuren currently works as a trainer at the SIX Security Operations Center. Cephyrine Zimmermann took an unusual career path. She's a former e-sport player and was the first woman in





Juliette (picture above, standing on the right) and her partner writing code for the next drone flight.

Will Lea (pictured right in large photo) soon be working in the IT sector? She used her day at SIX to get her first taste of coding.



Switzerland to make a name for herself in the field. E-sports introduced her to coding, and today she works in the IT sector. Zimmermann sees to it that the IT systems in the human resources department at SIX operate flawlessly.

Alongside the drones, small robots and other diversions kept the day from becoming just a series of speakers recounting their experiences. The Girls 4 IT Day gave the students the entire afternoon to have their first handson encounters with coding in a variety of workshops. The moving and blinking robots, too, were programmable via computer using a color code. From there it was just a small step to programming a personal website using HTML code. The sinister sides of the Internet were also addressed. The workshop on the

## IT Apprenticeships at SIX

Every year, SIX hires up to 11 IT apprentices and one mediamatician for vocational training. Each year the application phase for the next year begins in September.



→ More information six-group.com/apprentices topic of phishing, which, like all of the workshops, was moderated by apprentices at SIX, vividly demonstrated to the students how they can protect themselves from scammers.

#### IT Isn't Just Mathematics

"I can definitely see myself working in IT one day," says 13-year-old Lea. "Today was a great opportunity to explore a new area and get a taste of coding." Her comment delights Diego Suter, who's in charge of the IT apprentices at SIX: "Many schoolgirls don't have an education in IT at all on their radar. Our aim with the Girls 4 IT Dav is to raise their awareness of the IT world and to show them the career opportunities that exist and just how multifaceted information technology is." SIX deliberately wants to get more women and girls interested in and enthusiastic about IT. The Girls 4 IT Day playfully introduces schoolgirls to information technology and takes a look behind the facade of bits and bytes. "We want to counteract, to a degree, the impression that IT consists solely of mathematics. Some math is indeed reguired, but English language skills, an ability to think abstractly, and good team-working skills are equally important," Diego says, while somewhere in the background a drone buzzes faintly.



RED highlights SIX in all of its many facets and even goes a bit beyond that. Captivating stories, illuminating background information, and interviews with fascinating people have earned RED a host of international accolades, ranking it among the most distinguished B2B magazines in the financial industry.

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The List

## Faith in Technology

Religious communities of all kinds are discovering innovation.



#### 2012

In Yangon, the religious capital of Myanmar, escalators transport up to 2,000 visitors per day from the entrance of the Shwedagon temple complex to the giant golden pagoda.



#### 2015

At the height of its success, the hipster SoHo Synagogue in New York City launched its own social network called Synago.



#### 2016

**Solar photovoltaic cells** on the roof of the mosque in Tadmamet, Morocco, a remote village nestled in the High Atlas mountains, produces enough electricity to power all of the local streetlights.



Ganesh is the most important Hindu deity for the city of Pune in southern India. For Ganesh Chaturthi, the annual festival in his honor, a ritual normally performed by a priest has been taken over by a robot.



#### 2020

In the Peterskapelle, the oldest church in Lucerne, QR codes and the payment app TWINT let visitors pay for candles and make donations using their smartphones.

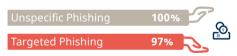
#### The Statistic

## Phishing Threatens Financial Institutions

The SIX Cyber Security Report 2019 provides an overview of how exposed the Swiss Financial Center is to cybercrime threats. The most notable types of actors are cybercriminals, whose aim is to make money, and governmentbacked entities, whose aim is to acquire competitive advantages. Malware in the form of banking trojans, cryptominers, and the mobile version of it had the biggest impact on financial institutions.

Among other sources, the cyber security experts from SIX analyzed data from around 40 financial services institutions headquartered or with a significant presence in Switzerland. This data also shows that phishing was by far the most common form of attack last year. All the financial institutions consulted registered unspecific phishing attacks, most of them also targeted ones. More than half suffer from constant attacks. The human being – as the object of phishing – thus remains a decisive factor in any cyber security setup.

#### Share of Financial Institutions Affected by Phishing



#### **Incidence of Phishing**



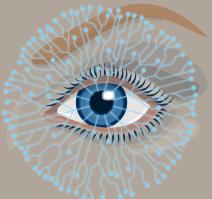
The Glossary



## **b.Link**

We blink to keep our eyeballs moist, but researchers at the Max Planck Institute for Psycholinguistics in Nijmegen, the Netherlands, recently ascertained that we also use our eyelids to communicate. A short blink appears to signal understanding and a long blink seems to signify impatience. The b.Link platform from SIX likewise simplifies communication. But the platform's name has nothing to do with blinking. Its name actually stands for the "best link" between financial institutions and thirdparty providers.

Through b.Link, SIX supplies standardized interfaces to financial institutions and software and service providers to enable them to securely exchange payment transaction data with each other. Two applications that boost the



efficiency of providers of accounting software, for example, currently stand in the foreground. One of them enables accounting software providers to directly access bank account information on the account holder's authorization. The other application allows them to directly submit payments to banks; the account holder can then release the payment directly via e-banking portal.

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More information: six-group.com/b.link

The Quote

"It was very good that this conference linked discussion of regulation with discussion of the digitalized world, where we see a completely changing environment."

**Göran Fors**, Deputy Head of Investor Services, SEB, at the SIX Post Trade Forum 2019 in London on the topic of regulation, politics, and managed disruption.

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#### **Editorial Staff**

Claudia Holfert (SIX, Overall Direction); Matthias Bill (SIX, Editor in Chief); Simon Brunner

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**Juan Dominguez** paints the picture of a transparent art market.

Kevin Abosch is "giving his blood" to instigate a discussion on the value of art.

## "Is a Real Intrinsic Value So Important?"

**Future Talk: Tokenization of Art** Blockchain technology enables trading of digitized assets, a category that can also include non-bankable assets such as real estate and paintings. Technology-savvy conceptual artist Kevin Abosch and Juan Dominguez from the investment platform Maecenas discuss the impacts on the art market.

Interview Matthias Bill

Kevin Abosch, you're known as the artist who became a Bitcoin. What's life like as a cryptocurrency?

Kevin Abosch I always chuckle when that comes up in conversation. The *Forbes* magazine headline that you're referring to was cleverly chosen, of course, but is completely unfounded. I created a virtual work of art with IAMA Coin, or actually ten million virtual works of art.

To do that, I used blockchain technology like Bitcoin does, the Ethereum protocol to be precise. That, however, doesn't make IAMA a cryptocurrency. What the token has in common with cryptocurrencies is that it's divisible to 18 decimal places. I find it fascinating that although each tiny fraction of an IAMA Coin has the same intrinsic artistic value as one or multiple IAMA Coins, there are people who nonetheless want to buy 10,000 of them. Juan Dominguez Perhaps they view it as an investment in the hope that your virtual work of art and their stake in it will increase in value. We at Maecenas are trying to enable such investments, also in physical works of art. For

example, we use blockchain technology to "transform" an individual painting into numerous asset tokens that each represent a percentage share in the physical work of art, and that are also tradable.

#### Like a stock?

D Our asset tokens are in fact roughly comparable to equity securities, at least along general lines. But we've had to do some rethinking since our successful 2018 auction of the Andy Warhol painting "14 Small Electric Chairs." We set up that auction – our first one ever – as a security token offering, which positioned us in the immediate vicinity of conventional securities from a regulatory standpoint.

But since legislation at the moment is not keeping pace with technological advancements in every point, today we speak of asset tokens. This means that we have adjusted the procedure to stay compliant.

A The sensitivity with respect to the legislation of blockchain technology and initial coin offerings also affects me in a way. A former federal **>**  prosecutor has advised me never to utter the word "investment" in the same breath as "IAMA Coin." But I have never suggested that the ten million tokens I created would be a good investment or security even.

They are virtual works of art and a reaction to a shift in the view of my work from artistic to financial value. It was my attempt to control this shift.

## That's a surprising statement for an artist who sold the photo of a potato in 2015 for a million US dollars.

A Well, "Potato #345" hung for years in my home before one of my guests liked it so much that he wanted to buy it. We reached an agreement. The price was in line with the prices of some of my other works of art. I could go on to explain why the potato, to me, is a proxy for the shared human experience, and so on. But what's far more interesting is the discussion around price discovery and how it ascribes value.

**D** And now we're in the thick of the matter. Anyone who bought a token or a fraction of a token at our Warhol auction will find the symbol WRHL1 in his or her digital wallet. It represents his or her stake in the physical work of

"We use blockchain technology to 'transform' an individual painting into numerous asset tokens."

Juan Dominguez, Maecenas

art. But if I have an IAMA Coin in my wallet, do I really own a share of you? A That's the question, isn't it? Viewed objectively, with IAMA Coin, the token in itself is the work of art. But it was important to me to create a connection to the real world.

Fortunately, my wife is a doctor. I had her draw blood from me that I used as ink to print the coin's alphanumeric "contract" address on paper. This gave rise to a number of physical works of art that are connected to the virtual works of art. For this reason, I feel that each IAMA Coin is a piece of me.

**D** For us at Maecenas, of course, it's exclusively all about creating a connection to the real world - to the actual work of art and its true value. That's why we also take a lot of time to verify the authenticity of a work of art and to, of course, set a realistic price. For the Warhol, we estimated a value of USD 5.6 million, which equates to 1,000,000 tokens at USD 5.60 apiece. A But is a real intrinsic value so important? For a good cause, I once tokenized a photo of a rose and used blockchain technology to auction it without anyone ever having received the photo or any part of it.

Many people found it difficult to comprehend how a work of art you could not hang on a wall or even see could have value. Ironically, the same people trade cryptocurrencies, which are also immaterial and "mechanically" identical to my virtual art.

#### Should galleries be worried about the blockchain technology disintermediating them?

A Blockchain technology has the potential to shift power from governments and institutions to the people. For the art market, this could mean that artists would have tools at their disposal to be able to circumvent galleries and sell their works of art directly to their clientele. That said, I believe that galleries will always play an important role in discovering young artists and giving them visibility.

**D** We, in fact, do try to connect buyers with sellers directly, not least with

#### **Kevin Abosch**

The Irish-American conceptual artist Kevin Abosch is known for his photography and generative art leveraging technology like artificial intelligence and blockchain. His work has been exhibited in museums including the Hermitage in St. Petersburg, and he has collaborated with artists like Ai Weiwei. Abosch's achievements have earned him the highest accolades in the art world. He has also repeatedly made headlines in the mainstream press – like when his photo of a potato sold for a million US dollars, or when he tokenized himself for his IAMA Coin project. That fits well with his side job as the creative director of Animoca Brands, a game and app developer keenly focused on leveraging new technologies.

#### Juan Dominguez

Before joining Maecenas in 2017, Juan Dominguez worked for big global banks like JP Morgan, ANZ, and ING. His career took him around the globe (the UK, Australia, the Netherlands, and Spain) and on to Singapore, where Maecenas is headquartered. He has been the Chief Strategy Officer of Maecenas since 2019, leveraging his extensive experience in institutional banking, real estate, corporate consulting, and private equity. He holds a bachelor's degree in international business and a master's degree in applied finance from Macquarie University in Sydney, Australia, Maecenas wants to democratize access to the art market through its investment platform based on blockchain technology.

the aim of reducing commission fees. However, our sellers to date aren't the artists themselves – not yet. At the moment, our efforts are directed more toward enlarging the buyer side of the art market. Through its transparent processes, our platform lowers barriers for new entrants.



A Other platforms that leverage blockchain technology also invoke the transparency argument, but I doubt that it will catch on in the art market. Regrettably or not, the art market isn't exactly known for promoting transparency, and many actors in the art market are guite happy about that.

D But certainly not all of them. Alongside verifying the authenticity of works of art, transparency also includes price discovery, as I described before using the example of the Warhol painting. If I want to buy a share of Apple Inc., I can find the last traded stock price without much effort. It's considerably more difficult to find the latest traded price for a work of art that was last up for sale decades ago.

"There is a human and real-world art "

A I understand what you're saying if we're looking at art purely as an investment. But there are myriad reasons why someone buys art. There is a human and real-world component to collecting art. And this throttles the efficacy of platforms that seek to use technology to revolutionize the art market.

Social proof or validation can influence purchase decisions. They can also be driven through interacting in person with artists or their representatives. I think the art market is a difficult one to be disrupted by technology, although I think most everything can be disrupted.

**D** Beyond the investment aspect, we definitely aspire to instill enthusiasm for art in people who previously have had no connection to it. Take myself, for example. I didn't know much about art before I joined Maecenas. Back then, it never would have occurred to me to buy a painting. Today, though, I would gladly invest in art if I had the money. It needn't be a Warhol. I would also take young, unknown artists into consideration. Just like I wouldn't invest solely in blue chips on the stock market.

A I am not sure that we need blockchain technology for that. The best reason for buying art is because you want to experience a work of art - or at least share in the experience.

#### **Blockchain Technology and Art**

#### Will the Art Market Be Disrupted?

six-group.com/innoday2019

Conceptual artist Kevin Abosch and Juan Dominguez, Chief Strategy Officer at Maecenas, took part in a four-person panel discussion at the 2019 SIX Innovation Day event. Alban Fischer, Chief of Digital Platforms for Art Basel, concurred with Kevin Abosch: "As creative as the art world is on the artist side, it's conservative when it comes to digitalizing processes in the industry. There are calculating investors who buy art with their heads, there are passionate collectors who buy art with their hearts, and then there are those who want to get close to the art scene for social motives. Technology arguably doesn't have the same significance for each of those groups."

The photo of Kevin Abosch and Juan Dominguez was taken in the Migros Museum of Contemporary Art. Heike Munder, the director of the museum and the fourth panelist in the discussion, emphasized the "experienceability" of art: "People love the physical elements of an object. They want to touch it, smell it, possess it."

Platforms like Maecenas, in contrast, view art as an investment opportunity. Blockchain technology turns an individual work of art into numerous asset tokens that can be traded in the future, for instance on the SIX Digital Exchange (SDX). The SDX was one of the initiatives on display at stands, in workshops, and in presentations at the 2019 SIX Innovation Day event. Some 17 internal experts on subjects such as analytics, robotics, and design thinking explained to employees and guests how ideas originate and get put into action at SIX.





Read the unabridged version of this interview in our blog: six-group.com/tokenization-of-art

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