

bulletin



The Credit Suisse Magazine since 1895 Issue 3 July/August 2010
International Edition

Movement

Man was born to run – but only a few can match Dave Dollé's pace. Watch the multiple Swiss champion speed away on your screen! (See instructions on page 30)

New York Philharmonic 3-year partnership extended
Access to Banks Financial inclusion soon likely for billions
Wolfgang Rihm An interview with the German composer

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SWISS MADE



When Mathias Plüss describes man as an active animal whose ancestors literally chased their prey to death (p. 28), his reasoning makes perfect sense to me. As a child, I would run to get from point A to point B if I had the choice. Leisurely strolls were never my cup of tea, and as a young soccer player I was known more for my endurance than for any technical tricks or quick bursts of speed.

And yes, it was only a matter of time before I, too, decided to run my first marathon. Not because everyone else was doing it, as Plüss laments, but because the myth of the marathon had always captivated me, and because the elation I felt the first time I crossed the finish line was simply indescribable. But I have not (yet) succumbed to the trend described in his article toward increasingly extreme challenges, such as the Jungfrau Marathon with its 1,829-meter (5,960-foot) ascent; the sight of leaden-legged participants in agony on climbing a few steps at Zurich's main station the Monday morning after the race will tell you why. Besides, the verdict of medical science is in: Marathons are not a prescription for good health.

Our cover model, Dave Dollé, does not happen to be a long-distance runner, however. He is a Californian-born Swiss sprinter who still holds the Swiss 100-meter record of 10.16 seconds. Dollé posed (running) for our special title page, which offers you a playful display of the latest in modern computer technology. All you need is a computer with a Web cam and to follow the instructions on page 30. You'll be truly amazed.

The bulletin team is taking further steps toward mobile communication in this issue. So-called QR codes link your Web-enabled mobile phone directly to additional images, videos and other information. And detailed links and services for individual bulletin stories or the entire magazine are available via the image recognition app kooba. You'll find instructions for these new features on pages 10 and 11.

And, best coming last, good news from the home team: For the sixth time since 1993, bulletin received a medal at Germany's Best of Corporate Publishing Awards in the category of finance and insurance. This year, as in 2009, we went away with silver. The bulletin editors are moved and elated by this honor!

Daniel Huber, bulletin Editor-in-Chief



Augmented Reality
Instructions on the moving cover page with "augmented reality" technology **page 30**

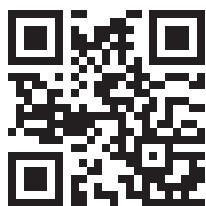


Image Recognition
The kooba app—description and instructions **page 10**



QR CODE
Instructions for the mobile Internet link **page 11**

The QR code for the mobile edition of bulletin:



To access the mobile bulletin edition via your smartphone, type in the following URL:
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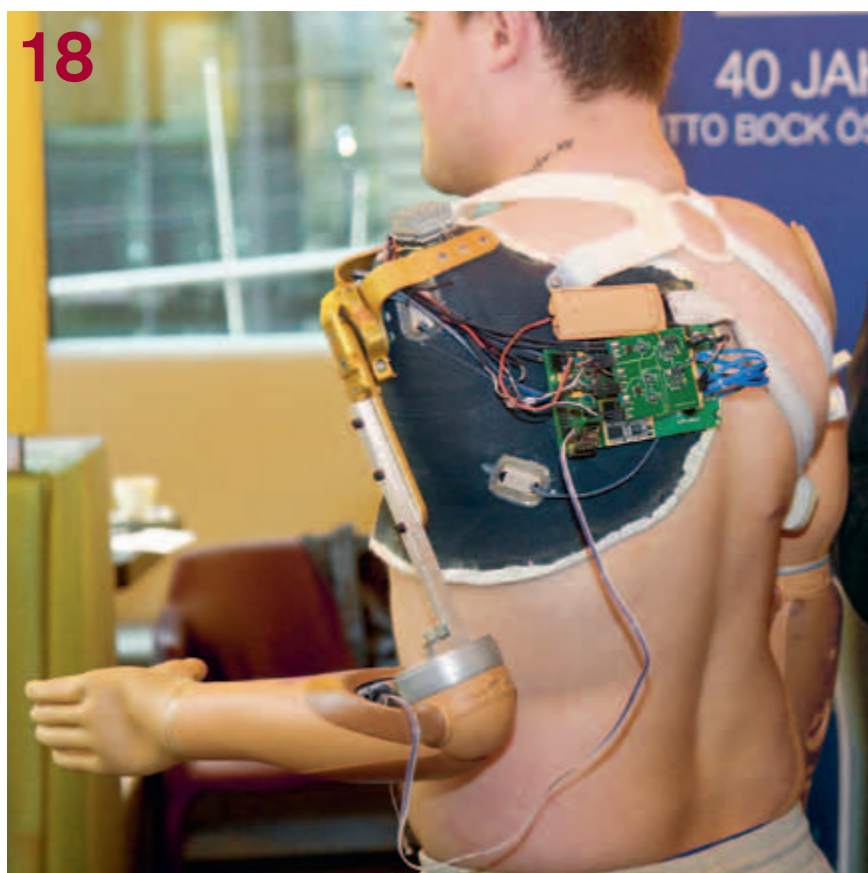
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18



Cover photo: Mathias Hofstetter | Photo: Lukas Ilgner

Movement Christian Kandlbauer can move his left robotic arm only with the power of his thoughts. The moving story of a young man fighting to gradually recover his independence with the help of cutting-edge technology and an iron resolve.

- 6_ **The Future Is Mobile ...** Mobile phones are fast becoming the central hub for today's networked world.
- 14_ **The Dream of Perpetual Motion** The dream of a self-propelling machine is still alive.
- 18_ **The Power of Thought** Cutting-edge technology and willpower to spare make it possible.
- 22_ **Modern Dance** Anna Halprin, age 90, is considered one of the greatest movement artists of the postwar era.
- 28_ **Endurance Hunters** In hot climates, man can outrun any animal over long distances.

Credit Suisse

- 31_ **News in Brief** A new CFO; Picasso and other painters on show in Zurich and Melbourne
- 32_ **DeChellis** Interview with the head of Private Banking Americas Anthony DeChellis
- 34_ **Middle East** Professors discuss the future of banking and of the Arab world
- 36_ **Latin America** Interview with the former president of Mexico about the region's future
- 38_ **Salzburg Festival** It all began as a quest for "spiritual peace"
- 40_ **Marjana Lipovšek** Perfecting blossoming young talent for their opera roles
- 41_ **New York Philharmonic** Partnership with Credit Suisse extended by three years
- 44_ **Education** The children of Tanzania's nomads should also be able to go to school
- 46_ **Climate Protection** Credit Suisse is now greenhouse gas-neutral worldwide
- 48_ **Continuing Professional Development** In-house training is a key driver of success

Economy

- 50_ **Multicultural** A growing trend in the US: Children and teens are learning Chinese
- 53_ **Shadow Money** How shadow money can shed light on inflation and cause bubbles
- 58_ **Access to Finance** Billions of people will soon have access to financial services

Leader

- 62_ **Wolfgang Rihm** Making contemporary art accessible to the common man

Service

- 35_ **Masthead**
- 61_ **Good to Know / Book Reviews**

The Future Is



Mobile

Single Source Communication



With faster networks, new applications and innovative usage concepts, the mobile phone of the future will be the key monitor of a networked world.



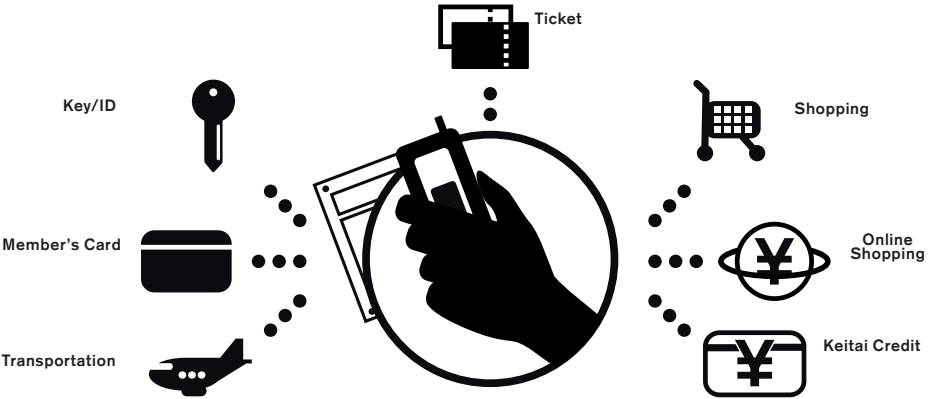
Paying by Mobile Telephone

Text: Claude Settele

People usually take three things with them when they leave their house: wallet, keys and mobile phone. In the future it may come down to just the mobile. Launched as a device for conversation and evolving to become a portable music and video player, the mobile phone is opening up avenues to a networked world thanks to Internet connectivity. The mobile phone has now become astonishingly widespread. According to the International Telecom Union (ITU), there are now more than four billion mobile phone users around the world. Forecasts by the research company Gartner Group show that 80 percent of mobile phones will be equipped for data communication by 2013, and new applications will see mobile Internet use really take off.

Elastic Mobiles and Faster Speeds

The success of the iPhone was the starting gun for the mobile Internet, even if at the same time it revealed the limits of data networks. In major conurbations, the existing bandwidth is often insufficient to accommodate the scale of use in today's world. The



→ **The Japanese have been using their mobile phones for years as electronic wallets for shopping and other payments.**



Nokia plans to use new materials in the future to construct stretchable and flexible telephones.

US provider AT&T has seen data traffic grow by around 7,000 percent in three years. In the near future, the fourth generation (4G) of mobile telephone technology is expected to bring some relief, but more powerful networks are also an industry necessity. IBM predicts that mobile data traffic will increase more than tenfold between 2010 and 2013, amounting to more than 2,000 petabytes (billion gigabytes) a month. Swisscom has already launched tests for the new 4G network, which at 150 MBit/s will increase speeds even in the initial phase by a factor of roughly 10 to 20. This bandwidth will enable users to exploit applications such as HDTV and online gaming in 3D worlds. Another imminent development is Near Field Communication (NFC) radio technology, which will help electronic payment by mobile phone get off the ground. Thanks to comparable technology, the mobile-mad Japanese

7,000%

... growth in data traffic has been recorded by AT&T in the three years since the breakthrough of mobile Internet.

have had the luxury of contactless payment by mobile phone for several years now. Osaifu-Keitai is the name of the electronic wallet that allows the user to purchase tickets and newspapers, acts as an electronic key for doors, and serves as both an ID and a credit card simultaneously.

And just what will the mobile of the future look like? Very adaptable, or such is the conviction of Nokia's engineers. Together with the Cambridge Nanoscience Center in the UK, Nokia has developed a mobile con- >

cept that goes by the name of Morph, using new materials based on nanotechnology as well as transparent electronics. It can take the traditional form, can be stretched or can be wrapped around the wrist like a piece of jewelry. Sony too is exploring dynamic possibilities and experimenting with pliable color displays, while patent applications submitted by Apple suggest that future iPhones will have “feelable” functions, as well as buttons that disappear in certain contexts.

If the company Dynamic Digital Depth has its way, we will be able to view 2D content in 3D on our mobile phones in the future. The company has developed a new kind of software to enable this phenomenon, as well as an “autostereoscopic” display. By tilting the mobile into a horizontal position, for example, figures from a game will appear to emerge from the display. The effect can be seen without the need for special glasses. Samsung is intending to launch a mobile phone of this type in game-happy South Korea before the year is out.

Remote Diagnosis Thanks to Telemedicine

Wireless devices for the monitoring of patients have existed for quite a while, but the mobile phone is now forcing its way into this market, too. Its application in this sphere can provide a valuable service, particularly in more rural areas that lie far removed from medical centers. In an area of India threatened by malaria, Nokia is testing a service known as HealthRadar, which can be used on-site with a mobile phone. It allows the user to capture data in a straightforward way and then quickly upload this to a server so that a rapid evaluation of the progress of a disease or epidemic can be evaluated. The traditional paper route is simply too slow to prevent an outbreak from occurring. Another major area of application will be the monitoring of patients, with numerous applications

2,000

petabytes of data are likely to be transported every month across global mobile telephony networks by 2013, according to a forecast by IBM.

Bulletin Image Recognition

kooba recognizes photos of CDs, books and newspapers and provides information from the Web. Now also available for Credit Suisse bulletin!



Here's how: Launch the free kooaba app (iPhone/Android), take pictures, receive the link.

1



Take a photo of the cover page of bulletin with the kooaba app and confirm with the “Apply” button.

2



The app then displays a list of all available information, links and options.

3



Anyone with a free kooaba Web account can gain online access to all photographed objects, including information.

for the iPhone and other devices either under development or already available. The US company Corventis has developed a sensor designed to be worn under a shirt: It records a continuous heart cardiogram and sends the corresponding data via mobile phone to a server. A doctor can call up the information in real time, even by mobile telephone when on the move. Other ailments are also suited to this kind of monitoring, such as sleep disorders, asthma and diabetes.

Telemedicine has huge potential when it comes to remote diagnosis. Bill Gates, who supports many health projects in Africa through his foundation, has stressed the importance of the mobile phone for countries with less well-developed infrastructures. He is interested in a mini-microscope developed by the University of California at Berkeley that can be coupled with a mobile telephone and used in the field to diagnose malaria, tuberculosis and other diseases on the basis of blood and saliva samples. Also under development are simple ultrasound scanners with an iPhone connection that even enable the mobile phone to be used as a stethoscope when no medical infrastructure is readily accessible.

Link Between Real and Virtual World

One interesting development is the so-called “Internet of things.” This is a concept that describes the networking of the physical and virtual worlds. Objects are provided with an identification number that enables information to be called up on the Internet. Camera mobile phones play a bridging role in this respect. Best-known are the codes printed on products such as the conventional bar code and the variants that contain more information such as the Quick Response Code (QR), Data Matrix, or the brainchild of the Swiss Federal Institute of Technology (ETH Zurich), EZCode. In this issue, Credit Suisse bulletin is also using QR codes to provide its readers with links to further information on selected articles.

Barcodes and their successors have been around for a long time, but it is only thanks to the new generation of phones and dozens of apps that a mobile can now also be used as a scanner. For example, the mobile phone can be used to call up detail on ingredients and calories in foods, compare prices and call >

Applications Already Available For Smartphones



- 1 Schedules** Whether you're traveling by bus, train or plane, a smartphone can show you the best travel connections and usually also lets you purchase tickets, too. (Sample app: NYC Subway)
- 2 Satellite** Look at the whole world with a bird's eye view. (Google Earth)
- 3 Product scanner** Use your smartphone at the supermarket to scan barcodes and receive detailed information on products. (Codecheck)
- 4 Radio receiver** Thousands of radio stations to suit every taste, available on your smartphone. (Radiobox)
- 5 Book reader** Special app to download electronic books to your smartphone in reader-friendly format. (Stanza)
- 6 Shopping cart** Online shopping from the office is followed by smartphone shopping en route. (Tesco)
- 7 Painting** Creative finger-painting on the display. (Brushes)
- 8 Mountain guide** Can't remember which peak is which? Point your phone at any mountain and this app from ETH will tell you its name. (Swiss Peaks)
- 9 Green conscience** Analyzes the ecological impact of a journey. (greenMeter)
- 10 Star gazer** Smartphones also make handy companions for amateur astronomers. (Pocket Universe)
- 11 Gaming** Use your smartphone as a console to play hundreds of games. (SimCity)
- 12 Outdoor guide** GPS lets you record hiking, jogging and cycling routes, and displays relevant maps. (Endomondo)
- 13 Free calls** With the Skype app, smartphone users can call anyone in the world for free. (Skype)
- 14 Music encyclopedia** This app tells your smartphone the name of musical works and provides information on them. (Shazam)
- 15 Video player** Wireless video transfer from PC to smartphone. (Air Video)
- 16 Navigation device** As it has permanent contact with satellites, your smartphone also acts as your navigation device. (TomTom)
- 17 Networker** Lets you know which friends are nearby. (Foursquare)

Just a Single Click On the Internet

A QR code leads you to useful information on the Internet in three steps.



Cracking a QR code is simple: Launch the free iPhone BeeTagg Reader app, photograph the code and receive the link.

1



Launch the BeeTagg Reader Pro app that is free for all mobiles.

2



Focus on the QR code until the green frame appears and the mobile vibrates.

3



A browser with additional information on the topic opens automatically.

The mobile bulletin's QR code:



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up information on tourist attractions during a tour of a city. Precisely where this journey may take us is highlighted by one New York boutique where the shopper can buy a fashion item immediately by simply scanning the code – even after the store has closed – by snapping an item of clothing in the shop window.

The visual search, which works without codes, goes one step further: A program analyzes objects captured with a mobile phone camera, compares them with a database, and supplies the corresponding information via the Internet. The Zurich-based start-up “kooaba,” a spin-off of the ETH Zurich, is a pioneer in this field and can identify photographed excerpts from more than 10 million objects thanks to state-of-the-art software. These include books, CDs and film posters, as well as articles from selected newspapers and magazines.

Google too is exploring the possibilities of visual search. A project by the name of Goggles can recognize objects such as books, wines, restaurants, or even works of fine art. Combined with the image database of Google’s Streetview, it is conceivable in the future that we might be able to photograph a building and then be sent back information

via mobile phone on the year of construction, owner, occupant and any apartments due to become vacant.

Clever Sensor-Based Applications

Applications of a very different nature will be made possible by sensors, radio frequency identification (RFID) tags and radio chips for networks with greater reach. Objects that are equipped with this technology will be able to establish contact with other objects. For example, cars will be able to exchange traffic data with one another, vehicles will be able to communicate with traffic lights, and parking garage columns with mobile phones.

A corresponding pilot project is currently under way in the US. Sensors buried in the asphalt register the parking places that are still available and provide the corresponding “live” map to be called up by mobile telephone. Urban planners hope that this will help limit the traffic caused by people driving around searching for a free space. The integrated parking meter will one day also eliminate unnecessary trips on foot, by enabling us to conveniently pay for an extended parking period via a phone app from a café, for example, in the event that our original period has expired.

Many applications already use the localization function of GPS mobile phones, but according to market observers, the real boom in applications using geo-localization has yet to take off. Route tracking of a company vehicle or the tour route of a cyclist are now just as much a part of everyday life as applications that inform us if friends are in the vicinity.

One highly promising area is that of “reality mining,” whereby the data of activities is captured in space and time, visualized on a map and then analyzed. The anonymized data of mobile phone locations is already used by the navigation system manufacturer TomTom, while the company Skyhook Wireless goes even further and has just launched a service in the US: It gathers data on movements of people via WiFi hotspots and the location of millions of mobile phones. Thanks to this data, you can now establish on an Internet map precisely where large numbers of people are congregating in urban areas. As Skyhook is also looking to make this information available to third parties, a number of applications that can exploit this data are expected to appear. The positioning information also makes further scenarios possible,

Competition
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- on your mobile via QR code



Here’s how: Launch the free iPhone BeeTagg Reader app, photograph the code, receive the link.



Geo-Localization



→ Clever apps will guide drivers to parking places and help to minimize unnecessary “search traffic” in urban areas.

Making Music With The World

→ The mobile phone can also be a piano, a flute, a guitar ...



With the apps from Smule, you can play music on an iPhone and an iPad, as well as with other "onliners" around the world.

such as the linking of personal data with a particular location. An idea of how this might work is given by the application Geominder, which reminds the user of an unfinished errand. The trigger for the reminder is not a particular time, however, but the place itself. For example, your mobile phone might remind you of the items you still need to purchase when you enter a particular store.

Sixth Sense

In addition to new types of devices and applications, the next decade will also witness changes in how mobile telephones are used. Touch-sensitive displays will of course be able to interpret even more gestures, but scientists are already working on the replacement of the "touch age" with the touchless era. At Dartmouth College in the US, scientists have shown how a conventional headset for producing an electroencephalogram can be used to control an iPhone by thought. Another possibility already being examined in the laboratory is eye-controlled mobile telephony, but both these methods are only at the first stage of research.

One project that may be quicker to come to market is that of SixthSense, although this hardly sounds less futuristic. Pranav Mistry from the Media Lab of the Massachusetts Institute of Technology (MIT) is developing a

usage concept involving contactless gestures. The scene demonstrated by MIT in a video looks like a magic show: A scientist "draws" colored light shapes on the wall using just his fingers, takes a photo by outlining a rectangle in the air, then projects this onto any wall and zooms the image into the air through pantomime-like finger movements.

No less impressive is a telephone call via SixthSense: The numbers on the mobile keypad are projected onto the user's hand, and when touched, the call is put through. This wizardry is made possible by a set consisting of a Web cam and mini-projector with a mirror that hangs around the user's neck and communicates with the mobile in his or her pants pocket. As futuristic as this scenario may sound, the concept relies on technologies that MIT estimates as available off the shelf for 350 US dollars – the clever software aside. Even further rooted in the future is a project that could surely furnish material for a science fiction film. At the University of

Washington, a researcher is working on a contact lens with integrated LED elements and a mini-antenna. The idea is for the lens to act as a display on which the wearer can view information transmitted from his or her mobile telephone. For example, this might include applications for "augmented reality," whereby information appears on the lens relating to an object currently within the wearer's field of vision. Should such technology one day become feasible, the mobile phone will be more than just a monitor of a networked universe. It will be the bridge between the virtual and the real world. <

Mobile Device as a Sixth Sense

→ At the MIT Media Lab, Pranav Mistry uses SixthSense to integrate the physical world and the world of data.



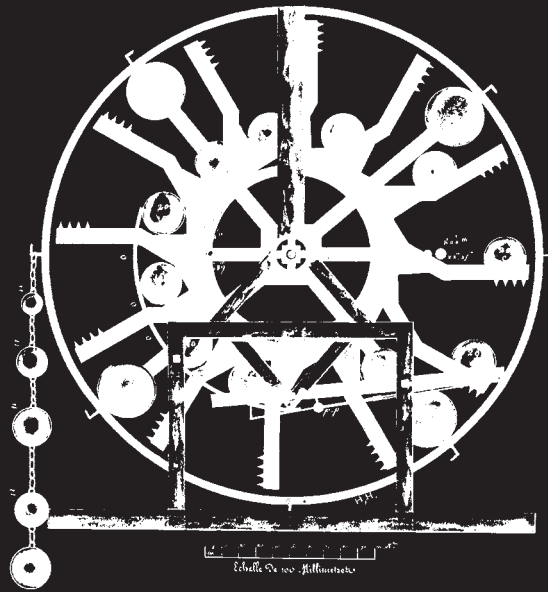
The video shows practical applications of the SixthSense research project.



Here's how: Launch the free iPhone BeeTagg Reader app, photograph the code, receive the link.



Model produced by the Indian mathematician
Bhaskara in the 12th century



The Dream Of Perpetual Motion

For centuries, inventors have been trying to build a machine capable of powering itself. “Impossible!” declares the world of physics. But this has only acted to further spur on those who would engineer perpetuum mobile.



Text: Stefanie Schramm

It's child's play, really: Simply attach two magnetic stones with some twine to a wooden beam, mount this onto an engine, then hotwire the two stones with an iron poker, and off you go! In the children's novel by Michael Ende, Lukas the engine driver builds this contraption in a twinkling of an eye and then flies off over mountains and through deserts with his friend Jim Knopf. The machine can go backwards, swim, dive, even fly – and all without the need for coal combustion. The name of this home-built construct: Perpetumobil.

The idea of a machine that can create its own continual motion without losing energy has been a dream of mankind for 800 years. The challenge is to overcome motionlessness, create energy from nothing, and replace toil – almost like an energy-related Garden of Eden. But ever since Julius Robert von Mayer formulated his principle of conservation of energy 165 years ago, science has been in no doubt: There is no fairytale world; you cannot create something from nothing, and perpetual motion is nothing less than an impossibility. But this hasn't prevented inventors, tinkerers, cranks and frauds from trying to create precisely such a thing on any number of occasions. Indeed, their continual failures have actually appeared to lend further urgency to the drive to create the machine of perpetual motion.

Mankind Seeks to Overcome Its Limits

Scientific historian Ernst Peter Fischer has recognized the drive for perpetuum mobile as a true quest. In his view, the fascination with incessant motion is an inherent part of man's nature: “Man is the one animal capable of recognizing his limits and seeking to overcome them.” And he hasn't done a bad job of it either – inventing all kinds of machines to overcome great distances on land, sea

and in the air, surveying the astronomically large world with a telescope, and scrutinizing the atomically small with a microscope. Practical setbacks and even theoretical contradictions have done nothing to restrain this drive, reckons Fischer. For to create a device of eternal motion is to cross the ultimate frontier: energy without limits.

Another explanation of the particular fascination of Homo sapiens with perpetual motion is the appeal of cycles, posits Fischer: “The celestial world is full of orbits. We are accustomed to referring to the ‘circle of life,’ and according to one cosmological theory even the universe will contract back into itself at some point before expanding again.” The idea of something perpetually circling is clearly irresistible. It is perhaps also no coincidence that the earliest surviving design of perpetual motion – a wheel construction – comes from India, where life is regarded as a cycle of continual rebirth. In 1150, the astronomer and mathematician Bhaskara described a wooden wheel with hollow spokes filled with mercury. As the heavy

liquid on one side of the wheel would always end up further from the center than on the other side, the wheel should theoretically turn for all time without any extraneous intervention.

Breaking With Antiquity

Less than a century later, the French architect Villard de Honnecourt constructed a very similar device that was supposed to have been powered by an uneven number of moving hammers. With this event, the idea of perpetual motion – after a brief stopover in the Orient – had finally arrived in Europe. Until then, the Western World had not even thought to engage with the concept of eternal motion. Aristotle had ruled out the notion of incessant movement “beneath the moon,” as in his view only the stars circled one another eternally. So when man set about replicating on earth the perpetuity of celestial motion from the 12th century onward, he had to break with the world view of antiquity.

Even the great Leonardo da Vinci would not prove immune to the fascination of >

“The thrill of contradiction kept the idea alive.”

Ernst Peter Fischer, scientific historian

incessant motion. In his notebooks he drew sketches of self-propelling machines as well as a contraption known as the “chimney jack” that would use the hot air current in a chimney to turn a roasting skewer over a fire. In his public utterances he distanced himself from the ultimate expression of such an idea, however: “Oh, ye seekers after perpetual motion, how many vain chimeras have you pursued? Go and take your place with the alchemists!”

But even such defeatist talk from one of the great designers of the age could not keep other Renaissance inventors from pursuing the dream. And indeed, the work of another great genius provided them with further inspiration: Galileo Galilei declared that the same mechanical forces applied everywhere – and on earth just as much as above it. Previously man had followed the Aristotelian division into above and below. But surely perpetual motion ought to be no less possible down here on planet Earth?

Energy – Key to Power and Wealth

“Natural philosophy was certainly a source of fascination in the quest for perpetual motion,” says Friedrich Steinle, a scientific historian at the Berlin Institute of Technology. “But so too, of course, was its practical application.” Very much like today, access to energy meant wealth and power. For millennia, man had to get by with just his own muscle power, which is just a fifth that of horsepower. The discovery of agriculture and animal husbandry following the most recent ice age revolutionized energy supply, as horses and oxen were then harnessed to pull ploughs and carts, giving mankind more energy than ever before. Cities were founded, and society could afford artists, architects, builders and writers – the abundance of energy allowed civilization to bloom. So what might be created with infinite energy? It was hardly surprising that the European courts became interested in the notion of perpetual motion in the 17th and 18th centuries. And even though the devices they thought up, with all their wheels, levers and hammers, didn’t exactly lead to energy-based world domination, they were nonetheless exceptionally entertaining, as every new unveiling had the effect of stoking the fires of sensation yet further: Would it move this time? A paradise for the con artist! The most famous of them all was once supposed to have encrypted his own name by means of a letter-coded wheel: The entrepreneur Johann Bessler from Saxony termed himself

first “Orffyre,” and then switched to the enigmatic “Orffyreus” by appending a Latin vanity suffix. He built a contraption that was supposed to be able to keep a large wooden wheel in motion by means of ropes and weights. In the castle of Count Karl, Landgrave of Hessen-Kassel, he set the machine in motion, had the doors of his experimental room sealed, and made an intrigued public wait two weeks. He then opened up the room, and lo and behold: It was still turning! The English physicist David Jones is nonetheless certain that Orffyreus was nothing more than an ingenious fraud. The inner mechanism of his device may have been “impenetrable,” but this was first and foremost because the inventor had it enshrouded in oil cloths.

In 1775, the Royal Academy of Sciences in Paris had finally had enough of all these tinkers and cranks. It resolved to “neither accept nor process any more proposals that relate to the phenomenon of never-ending movement” – and this wholly on the grounds of a never-ending stream of negative empirical results, without any theoretical contradiction of the principle then existing. “This must have been an astonishingly hard decision to make,” muses scientific historian Steinle.

New Principle Finally Ends Debate

The ground-breaking theoretical step was finally taken by Julius Robert von Mayer in 1845. He too had once occupied himself with the concept of an apparatus that would run permanently, until something finally dawned on him: Nothing can come from nothing! This led him to the conservation of energy principle, whereby in a closed system the total amount of energy always remains the same. In other words, energy can neither be created nor destroyed. At one fell stroke, the whole notion of perpetuum mobile had died scientifically.

“Anyone who continued to work on this concept from that point on,” says Steinle, “was automatically excluding himself from the scientific community.” It was a position that must have appeared extremely attractive to many researchers, reckons his colleague Fischer: “The thrill of contradiction kept the idea alive.” The author Paul Scheerbarth was precisely such a rebel, and converted the laundry room of his house into a perpetual motion workshop in 1908. His wife was unimpressed. “I simply can’t bear to hear you utter the word ‘wheel’ anymore,” she is supposed to have complained, “the very mention of it makes me feel unwell.” The obsession

Frauds, Cranks And Polymaths



Bessler, Johann Ernst Elias, (1681–1745), was an adventurer, physician and clockmaker – and became enslaved to the idea of perpetual motion for much of his life. A native of Saxony, he also had a knack for self-marketing: He adopted the enigmatic pseudonym Orffyreus. His death was as spectacular as his life was varied: He died after falling from a windmill.

Superconductors – One Cool Science

with self-perpetuating motion may have gone absolutely nowhere for decades, but not without benefit to science. “Great insights can be gained by tinkering around with daft notions,” says Fischer. Indeed, the conservation of energy principle itself, the first law of thermodynamics, was ultimately nothing more than a result of the quest for perpetual motion. The second law was also a consequence of this quest: Entropy, or energy degradation, increases continually. In other words, you cannot take a heat source and produce higher-value energy such as electricity without in turn applying more energy along the way. Constructions that are designed to run forever with just the heat of their environment are therefore condemned to failure. But it was precisely this preoccupation with the impossible that ultimately led to a practical discovery: the steam engine.

Even today, the serious scientific community can occasionally be made to engage with the idea of an energy paradise. In 1989, the “cold fusion” concept caused an incredible stir in the scientific community. Two chemists had maintained that they had succeeded in fusing atomic nuclei at room temperature. Energy can be gained from atomic fusion, but this normally requires very great heat or extremely powerful lasers. Without any need for expenditure of energy, such fusion would indeed lead to a kind of perpetuum mobile. Scientists around the world sought to replicate the experiment. But in vain.

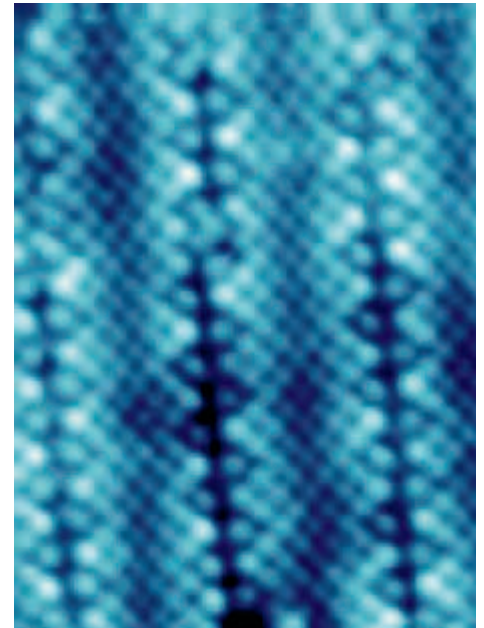
Closest Approximation: Superconductivity

The nearest mankind has come to a machine that powers itself perpetually is superconductivity. In certain materials refrigerated to

particularly low temperatures, energy can circle endlessly as it no longer encounters any electrical resistance. Of course, energy is required for the cooling process, but considerably less of it: While the first superconductor ever discovered would only function at minus 269 degrees Celsius, the best ceramic conductors today relinquish their resistance at a moderate minus 135 degrees. “If you were to discover a material that became superconducting at around freezing point, it would create a sensation,” muses Ernst Peter Fischer. “And that’s about the best chance you have of creating perpetuum mobile.”

Nonetheless, lone scientific wolves and indeed entire companies continue to seek the improbable. In 2007, anyone so inclined could view on the Internet the construction of the Irish company Steorn, which bore an astonishing resemblance to the model produced by Bhaskara in the 12th century – a plexiglass wheel onto which magnets were mounted. The world’s attention was held for a while, until it became clear ... that the device didn’t move after all.

But no doubt the next perpetually turning apparatus is undergoing refinement in some laboratory somewhere. Indeed, the idea itself is clearly a case of perpetuum mobile, powered by little more than the forces of curiosity and stubbornness. Nor does it change anything when the authorities call a loose cannon to order – like Homer does in the cartoon series “The Simpsons” when his daughter Lisa is working on a machine that will keep going forever: “Lisa, get in here! In this house we obey the laws of thermodynamics!” <



Superconductors are materials whose specific electrical resistance drops to zero when their temperature falls below a certain critical threshold; magnetic fields are displaced from the interior of the material. Dutch physicist Heike Kamerlingh Onnes discovered superconductivity back in 1911 using mercury.

“Lisa, get in here! In this house we obey the laws of thermodynamics!”

Homer Simpson, American animated hero



Text: Mandana Razavi

The Power Of Thought

An accident changed Christian Kandlbauer's life in the most radical way. The amputation of both arms robbed him of his freedom (of movement) and independence. But thanks to a wonder of technology in the form of a mind-controlled artificial arm, the young man has now been given his life back – a story made in cyber world.

Meeting Christian Kandlbauer for the first time is disconcerting. Because when this likeable young man offers his hand in greeting, you cannot fail to notice that it is a pro-

sthesis encased in silicone skin. Kandlbauer himself can't feel your handshake. When he moves his hands and arms, there is a humming sound, as if you were in the presence of a robot. And when he takes the silicone sheath off for the first time, it then becomes clear that this is exactly what is confronting you: His left arm is just that, a robot made of metal, cables, programmed microchips, a battery and all the associated paraphernalia.

Your initial apprehension then gives way to total astonishment when you hear the rest of Christian Kandlbauer's story: He is one of the few people anywhere in the world capable of moving and controlling their artificial limbs with the power of thought alone. But above and beyond this, he is also capable of feeling his left arm, and can also feel objects with the index finger of his high-tech prosthesis. Almost as if nature had originally envisaged such a thing for any healthy human being.

Total Loss of Independence

Christian Kandlbauer was just 18 years old when both his arms had to be amputated following a terrible electrocution accident. A psychologist took on the job of helping the young man process the appalling psychological shock of this incident, which took place just after he had started training to become a mechanic. You only have to put yourself in his place for a few minutes to be able to imagine what it must be like for someone to live without arms or hands. Brushing your teeth, putting on your coat, opening a door – the average person does all these activities and hundreds of others like them all the time, deliberately or automatically, taking them all entirely for granted. Losing your arms inevitably means losing your independence.

Kandlbauer's body also had plenty of learning to do before it could adjust to this entirely new situation. Over a rehabilitation period lasting many months, Kandlbauer learned how to control an artificial limb with three joints via the musculature of his stump. "After intensive training, I was then finally able to open and close my right hand, turn my wrist, and raise and lower my forearm with a

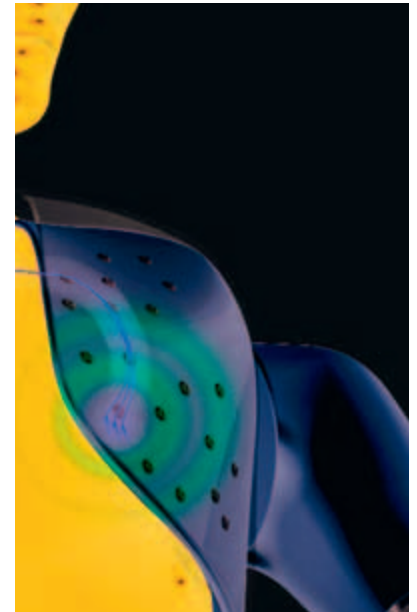
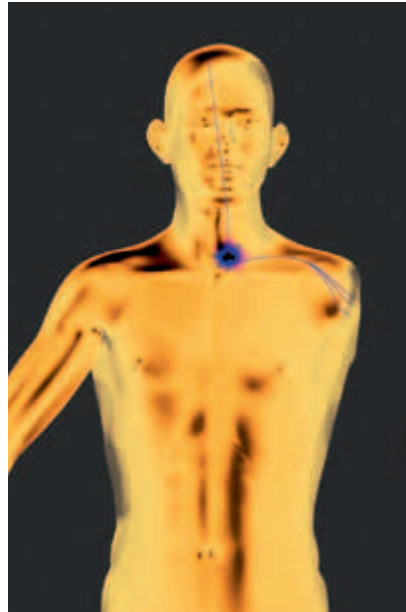
conventional prosthesis. However, I can only execute one movement at a time. What's more, controlling an artificial limb is a very demanding exercise, as it requires enormous concentration. And – discounting the phantom pains that occasionally fool me into believing that my hand is still there – I can't feel anything on my right side anymore, unfortunately."

On Kandlbauer's left side, things looked even worse to start with: This arm was so badly damaged by the electric current that his entire shoulder had to be amputated, too. As there was not even a stump remaining with which he could have operated an artificial limb using his remaining muscles, orthopedic technicians could only offer Kandlbauer a nonfunctioning "decorative" hand. It was a grisly outlook for a young man just starting out in life.

But Kandlbauer's fate was to take another unimaginable turn – so unimaginable, in fact, that one might be excused for thinking his story was lifted from a science fiction novel. It all started when the former director of the Weisser Hof rehabilitation center in Klosterneuburg, Austria, Dr. Herbert Kristen, contacted the Vienna-based research center of Otto Bock, a medical technology company, to inquire about a possible solution for Kandlbauer's badly damaged left side.

As it so happened, Otto Bock engineers were working at that precise moment on the implementation of a newly developed technology pioneered by Todd Kuiken, a surgeon based at the Rehabilitation Institute of Chicago. The procedure was designed to give patients a thought-based and purely intuitive way of controlling their artificial limbs – an unprecedented simulation of nature that >

The Surgical Procedure



→ **The use of a mind-controlled prosthetic limb first requires a complex operation involving the redirection of nerves. Following a surgical procedure called "selective nerve transfer," the signals that were originally responsible for moving the arm can be used again to control the artificial limb. Electrodes embedded in the shaft of the prosthesis receive these controlling signals. An electronic analysis procedure in the interior of the prosthesis then converts these signals into action, having correctly identified the particular movement that the prosthesis wearer wants to execute.**

would recognize the intentions of the prosthesis wearer and put the movement commands of the brain into effect in real time. Kandlbauer was asked if he wanted to be involved in this revolutionary research project and test the prototype of the first-ever intelligent cyber arm. “When they first told me of this new procedure, I had never even dreamt that such a thing would be possible. But it didn’t take me long to think it over – after all, this was the chance to regain my independence,” recalls Kandlbauer.

Phantom Hand, Cyber Arm

Once Kandlbauer’s six-month period of rehab was complete, the project, jointly managed by Todd Kuiken, Otto Bock and the Vienna General Hospital, could at last get under way. For the high-tech prosthesis to be used in the first place, the patient had to undergo a surgical procedure developed by Kuiken called “selective nerve transfer.” This complex operation had at that point only been undertaken by three surgeons in the world. One of these was Professor Manfred Frey, a plastic surgeon at the Vienna General Hospital. Together with his team, Frey performed this surgical procedure on Kandlbauer: “I had to redirect the remaining arm nerves from the shoulder to the chest muscle and stitch these to the latter’s nerve ends. Before the chest muscle could then be definitively reprogrammed as a ‘phantom hand,’ however, these nerves – which grow at a speed of around one millimeter per day – had to grow into the relevant chest muscle zone,” explains Dr. Frey.

Christian Kandlbauer was standing under the shower the first time he felt his phantom hand after the accident. “I felt water running down onto my left hand. Feeling in a hand that I had lost and that could never be physically replaced! It was an indescribable moment,” recalls Kandlbauer. The selective nerve transfer into the chest muscle had succeeded: “Parts of the thorax musculature had been successfully reprogrammed into hand musculature. So if you rap your knuckles on Christian’s chest, he actually feels you tapping his hand,” explains Dr. Hubert Egger, head of the “mind-controlled prosthesis” project at Otto Bock GmbH. With the operation successfully completed, the next step was to give life to the “phantom hand” so that Kandlbauer could then use it with the help of his cyber arm. “All commands that had previously been sent by the brain and spinal cord to the arm or the hand now come to his chest muscle thanks to the rerouting of the nerves.

Just like any muscle, it contracts on receiving an impulse. “The contractions allow direct inferences regarding the controlling signals being sent by the brain to the ‘chest muscle’ phantom hand, and they can also be measured by electrodes on the surface of the skin,” explains Dr. Egger.

Visualization of Thoughts

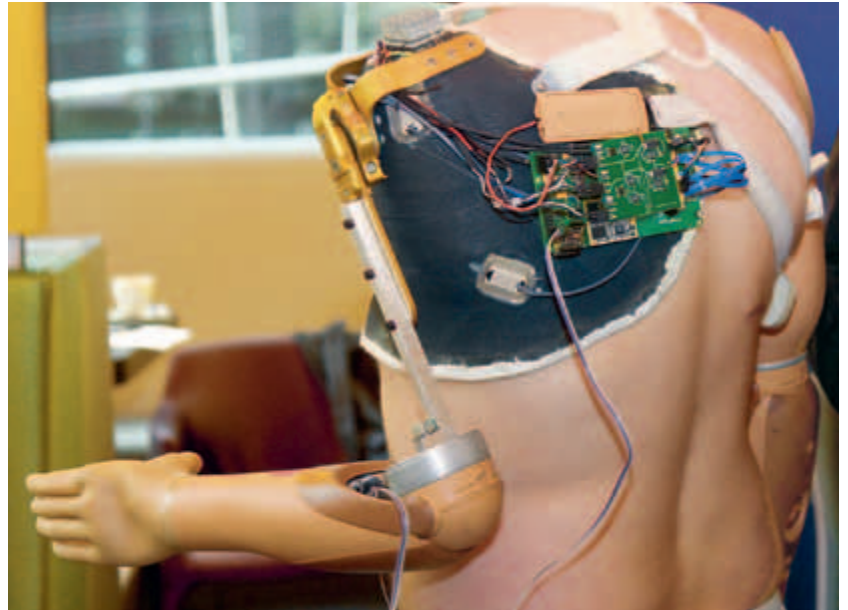
This sophisticated procedure enabled the electrical engineers at the Otto Bock research center to gather the kind of data that had up until now been the exclusive province of Mother Nature – a breakthrough for technology. The next step was to decrypt the various brain signals. For the artificial limb to be programmed and correctly aligned with the corresponding impulses from Kandlbauer’s brain, the scientists first had to establish which brain signals related to which precise

movements – no easy task when the patient’s arms no longer exist. Otto Bock had to design an unconventional solution. “We developed a special training procedure that involved projecting Christian Kandlbauer’s brain waves on a computer screen. While Christian had to imagine basic movements, such as grasping an object with his hand, a colleague supported this process of imagination visually by standing behind him and making his arms available – a bit like a puppet show. This enabled us to decrypt the individual brain signals as specific movement orders and then program the prosthetic limb accordingly,” explains Egger.

Research Into Greater Quality of Life

Today, hundreds of laboratory training hours later, Christian Kandlbauer just has to think “grasp coffee cup and lift it,” and his cyber

Technology of the Future



→ **Technology:** The intelligent prosthesis can be controlled in a targeted way via the same nerves that were originally responsible for moving the arm. The prosthesis wearer executes the movement in a purely intuitive way, by mind power alone, and thanks to seven active joints can reclaim a large number of capabilities that were lost as a result of amputation.

Getting Around by Car



→ **A dream fulfilled: Thanks to his mind-controlled artificial limb, Christian Kandlbauer has even managed to obtain a driver's license. He now drives himself to work every day in a Subaru Impreza that has been built according to his individual needs.**

arm with its seven joints executes both movements in combination, with precision and in real time. After spending so many hours in the laboratory, the engineers can probably even recognize the curve on the screen that equates to Kandlbauer's "grasp coffee cup and lift it" thought process. Neither the project team nor the patient are willing to settle for the success they have achieved so far, however. It appears that the mutual quest for "quality of life" – the official slogan of Otto Bock and the self-stated goal of Christian Kandlbauer – is spurring the research team on to new levels of creativity. The most recent coup is sensation in the hand, a further development of the mind-controlled limb: Microreceptors on Kandlbauer's index finger have taken on the role of the hand's natural sensors, reporting to the brain what the prosthesis wearer feels. "If you put an ice cube

in my left hand, I can feel it," says Kandlbauer. "I'm convinced that, at some point, I will not only be able to move all the fingers of my artificial hand independently, but also feel with them again."

Leap of Technology

Christian Kandlbauer has now gotten his life and his independence back. He is almost self-reliant once again, works in the same place as before the accident, and even drives a car – as both he and his vehicle have passed an official test. So it doesn't bother him that he has to recharge his cyber arm every night, just like other people recharge their mobile phones. Nor is he bothered by the somewhat eerie nimbus of the robot-like fusion of man and machinery, which can cause passersby to turn and stare. "Only God can judge me" are the words of the

Video Sequence



See how mind-controlled prostheses work.



Here's how: Launch the free BeeTagg Reader on your smartphone, photograph the code, receive the link.



More information is available at
→ www.ottobock.com

tattoo inscribed on Christian Kandlbauer's neck. Nor is he interested in comparisons with science fiction stories such as James Cameron's "Avatar." For ultimately, although his story involves plenty of "science," there is nothing fictional about it. And that's what really counts – because "Avatar" was yesterday's news. <



In harmony with nature: Members of Anna Halprin's modern dance group dance in the hills above Stinson Beach, California.

Breath Made Visible

Anna Halprin



She is one of the greatest movement artists of the postwar era, a rebel who has always broken radically with convention. Dance is breath made visible, says Anna Halprin. Why? Because dance is life is dance.

Text: Ute Eberle

One day back in 1975, the dancer Anna Halprin was in the vacation home that she and her husband – the recently deceased landscape architect Lawrence Halprin – owned on the coast of Northern California, when she noticed she had internal bleeding. At that time, Halprin had already been living for three years with an artificial stoma in her navel, the consequence of a tumor that had forced her doctors to remove parts of her digestive tract as well as one ovary. The bleeding she noticed was a signal that her cancer had returned. Halprin was 55 years old.

Her doctor urged her to come into his practice immediately. But Halprin begged for a four-week stay of mercy. “I was afraid,” she recalls. And for Halprin, that almost inevitably meant only one thing: She had to dance.

Dance as Survival Mechanism

Dancing is Halprin's profession, and one that has earned her many prizes. But it's also much more than that. Over the years, dance has become a form of survival mechanism for her, a means of seeking out answers to existential questions. “People have always used forms of dance to understand the mystery of life,” asserts Halprin. Many believe her to be one of the greatest movement artists of the postwar era, a legendary rebel who

helped bring avant-garde dance into world theater by breaking radically with convention. She was one of the first people to send naked dancers on stage (and was almost arrested as a result); the first person to establish a mixed white-black dance troupe following the race riots in Los Angeles in 1965; the first person to form a dance troupe decades later consisting solely of HIV-positive men.

“Anna challenged and changed so much in dance,” explains Janice Ross, a professor of drama at the University of Stanford who has recently written a biography of Halprin. “She asked: Who is allowed to dance? What should dance look like? When should it take place?”

What Dances Do Our Souls Call For?

Others see Halprin in a less flattering light: as an icon and cofounder of the touchy-feely culture for which California has become notorious. Together with her daughter Daria, in 1978 Halprin founded the Tamalpa Institute near San Francisco, where guests could learn such things as tapping into the “wisdom of the body” through movement, engage with their feelings, or mobilize their self-healing powers. “Everything in life is movement, everything in the universe moves. What are the dances that our souls call for?” asks the institute's Web site.

Halprin sees no contradiction in any of this. She considers herself as a student of everything that movement can do. While studying dance at the University of Wisconsin she dissected corpses to find how the muscles and tendons worked with one another to turn a hand or bend a knee. Even today, a skeleton hangs in her studio for such demonstrations. She still sees dance potential in even the most mundane of everyday gestures. One of her works cre-

The American Dance Pioneer



Anna Halprin has been dancing since the age of four. She has continually developed revolutionary trends for this artistic genre, as well as inspired others to take modern dance to new dimensions. Halprin is one of the pioneers of the expressive arts healing movement. She has staged many dance programs involving terminally ill patients, as she is convinced that there is a link between movement and the healing power of dance. Over the course of her life, she has created 150 dance pieces for the theater and received a wide array of honors and awards. For this 90-year-old artist, age is no excuse for hanging up the dancing shoes. Her motto? “Aging is like enlightenment at gunpoint.”



whenever her father had identified a new bargain buy. As one of the few Jews in the small community of Winnetka to the north of Chicago, she often felt like an outsider. “The other children in the school were blond and blue-eyed, and the girls would toss their hair around with a flick of their heads. When I tried to do this my hair would stick up and refuse to come back down again,” muses Anna. “There were certain events I was never invited to.”

“I Thought God Was a Dancer”

Because others would laugh at this boisterous four-year-old at the ballet, Anna's mother sought out one of the new types of dance schools that were then springing up, where instead of practicing demi-pliés at the barre, the children were free to dance around to piano music. And so began a hobby that the teenage Halprin resolved to dedicate her life to. Although she was not deeply religious, her Jewish origins shaped her dancing life. As a child, she watched her Jewish Orthodox grandfather with fascination as he prayed in the synagogue, his head thrust in his neck, hands raised, white beard dangling, while his body swayed in ecstasy. “For my whole life I have been looking for a dance that would touch me as profoundly as my grandfather was touched then,” says Halprin. “For me he looked like God, and so I thought God was a dancer.”

She got married while at university and then – after an intermezzo on New York's Broadway – moved to San Francisco, >

→ Halprin staged one performance with 69 retirement home residents in rocking chairs.

ated in the 1960s, for example, involved a sequence in which Halprin carried a hundred empty wine bottles onto the stage, one by one. This so incensed one Italian member of the audience that he dashed onto the stage and shouted: “Is this what Columbus discovered America for?”

Halprin danced when her mother was dying, and she danced when her husband lay in intensive care. Movement can bring us into the home of the soul, into a world for which we have no name, writes Halprin in her book “Returning To Health With Dance Movement And Imagery.”

Spry as a Goat

Today, at age 90, Halprin is petite with a mischievous, furrowed face and a body that is still “spry as a goat,” as New York Times critic John Rockwell noted a few years ago. Her vitality makes her look decades younger than she is. When filmmaker Ruedi Gerber made a documentary about Halprin recently (entitled “Breath Made Visible” and available from the fall of 2010 onward on DVD), he began filming a scene in which Halprin introduces herself to a passerby who is observing an experimental session of her dance troupe. “But Anna Halprin is supposed to be really old,” protested the man. “I AM really old!” retorts Halprin.

She has been dancing for almost 86 years now. When she was first taken to ballet by

her mother, Halprin was a four-year-old sprite with a red shock of curly hair, the only girl among 12 cousins with two older brothers. As a teenager, Halprin's father spent almost a year making his way on foot from Odessa to London, where he took a boat to America and subsequently made a fortune in textiles and real estate. “When my father needed a cashmere pullover, he would buy six,” recalls Anna, who suffered from the fact that her family would always move house

“Before the cancer, I lived to dance. Ever since, I've danced to live.”

where husband Lawrence had found a job. And it was here, far away from the culturally dominant East Coast of the US, that Halprin rejected everything that she had learned about dance conventions (“like a leotard that was too warm and clammy,” wrote one reporter) and began to investigate where she believed the emotional core of movement lay. “Dance does not have to come across as graceful, pretty or spectacular. Dance can give expression to conflict. Dance can stomp, fall, assault, cling and sprawl out,” she would later write.

Workshops in Decomposing Foliage

The couple built their own house on a steeply declining plot of land on the other side of the Golden Gate Bridge from San Francisco. It was here that husband Lawrence (who, among other projects, would go on to design Ghirardelli Square in San Francisco and the Roosevelt Memorial in Washington, D.C.) devised a dance floor for Anna on a site that would become legendary. Unevenly serrated, it rises up to nine meters above the ground in a grove of trees. Despite offering no protection against the elements, it has long served as Halprin’s only studio. Surrounded by rustling leaves, twittering birds and the “sweet smell” of decomposing foliage, it is here that Halprin hosted her workshops – with her pupils including renowned performers such as Trisha Brown, Yvonne Rainer and Meredith Monk – and developed dances to reflect what was unfolding in her life and her society. As Halprin points out, at certain times it was so cold that they danced in

mittens and shoes. At other times she would remain motionless, as an insect or bird flew past in order to gain inspiration from its movements.

Many dances that she choreographed during this period more closely resemble socio-critical oeuvres than the aesthetic art of movement. Such as the “Blank Placard Dance,” in which Halprin’s ensemble, the San Francisco Dancers’ Workshop, swept through the city holding up mock protest placards that were bewilderingly devoid of content. Or “Apartment 6,” a piece in which Halprin spent weeks cooking pancakes on the stage while she and two male partners “lived out” their relationship with no script.

Her cultural provocations brought her admiration, but also a great deal of rage. Spectators frequently booed, shouted insults or hurled objects such as shoes onto the stage. Back in 1963, an appearance of Halprin’s dancers in Yugoslavia (which involved such unconventional acts as monotonously walking up and down a staircase or eating grapes) provoked such controversy that the troupe was asked to remain longer to explain themselves at a hastily arranged press conference that was broadcast nationwide. “After a long debate, the 150 assembled dance critics and drama teachers decided that the work was either the greatest artistic performance for years, or that the dancers didn’t know what they were doing,” recounts Ross.

Halprin was often amazed at the vehemence of audience reactions. But although temperamental and headstrong – she once slashed all the tires of her husband’s car

This Way to the Dancing Images

“Breath Made Visible” – The Trailer



Want to watch some dance? Here’s how: Launch the free iPhone BeeTagg Reader app, photograph the code, receive the link to the trailer.



The Swiss Director



Ruedi Gerber has made a number of award-winning documentary films, including “Meta-Mecano” on Mario Botta’s Museum Tinguely, and “Living With the Spill” for British broadcaster Channel 4, which looks at the scourge of oil along the Alaskan coastline. Among various pursuits before becoming a director, Gerber once toured Europe with his one-man show “Spiwit of Spwing.”

“Dance can give expression to conflict.”



→ **Anna Halprin liked holding workshops in the grounds of her own home. The legendary open-air dance floor attracted many young, talented dancers. Mittens and inner fire provided protection against the cold.**

after an argument to prevent him driving away – the anger would never last long. Right from the start she felt that she was not tied to the stage alone, but could also perform her dances in places like aircraft hangars, between the cliffs on her property or in caves. “My mission was to keep breaking down the limits that had been imposed on what dance should be,” she says.

The cancer episode was a watershed. After Halprin discovered her internal bleeding at their vacation home, she invited 10 friends and their partners to act as “witnesses” to a solo performance in which she tried to exorcise her fears. Even for those who do not know Halprin personally, the photos of that day are difficult to view dispassionately. Dressed in a black frock, the dancer contorts herself in front of a self-portrait characterized by angular dark lines. She howls, screams, sobs, clenches her fists, falls onto her knees and groans like a mortally wounded beast, until she collapses in exhaustion. Later she would go on to dance a reconciliatory second act in front of a more cheerful self-portrait.

When Halprin finally went to her doctor – her stay of mercy now at an end – there was no longer any sign of the cancer. Today the dancer still believes that her “purifying” solo had the effect of bringing about a spontaneous remission. She retired from the public stage and increasingly worked with non-dancers, including incurable AIDS cases and cancer patients, with whom she sought to investigate the therapeutic impact of dance.

“Everyone is a dancer,” says Halprin, who once put on a performance with 69 retirement home residents, which involved them rocking back and forth in a coordinated manner in rocking chairs. “I have never seen a more soulful dance,” is how she recollects this experience.

Mass Dance as Healing Ritual

She is particularly proud, however, of the “Planetary Dance,” a mass dance in which up to hundreds of amateur dancers run or skip around in predefined circles. Anna and Lawrence conceived the prototype for this dance in 1981 as a healing ritual for their neighborhood after a serial murderer had killed seven

women on a nearby mountain (the culprit was caught three days after the dance was staged). Since then, the dance has been repeated in a modified form every year, finally spreading to 36 countries from Australia to Germany.

Halprin continues to teach twice a week, and has even returned to the stage. Her most recent projects have typically revolved around decay and death. At 83 she had herself filmed naked – wearing a wig made out of twigs and her body smothered in blue dye. She also appeared in a piece she wrote herself, entitled “Intensive Care,” alongside three younger partners. Wearing open hospital clothing, the protagonists mime pain, terror and rebellion before they finally succumb to death with acquiescence. As one critic wrote, it was “difficult to watch, but impossible to look away.” Halprin was “still posing the right questions,” wrote another recently.

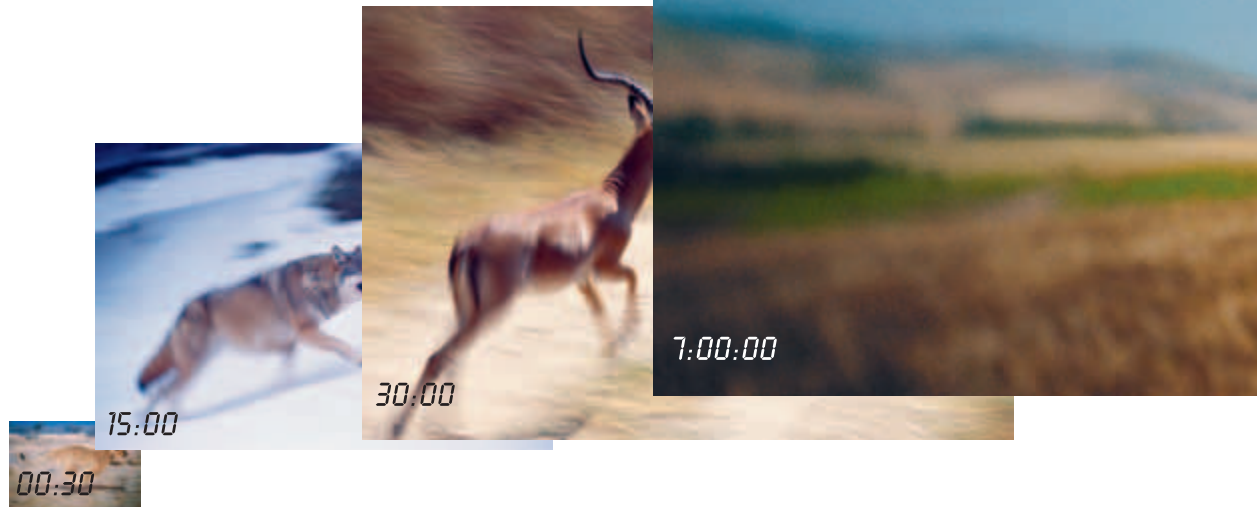
“Before the cancer, I lived to dance,” says Halprin. “Ever since, I’ve danced to live.” Nor is her life’s work yet complete. Even though she is almost 90, Halprin still has no intention of calling it a day. <

Endurance Hunters

Man is an animal on the move. In the extreme heat, we are unbeatable over long distances. This is what enabled our forefathers to chase their prey to death – quite literally.



Text: Mathias Plüss



Bernd Heinrich has recently turned 70 and is still running. Three of his US records from the 1980s are unbroken – over 100 kilometers, 100 miles, and 12 hours on the track. In five years' time he wants to set a new world record: again over 100 kilometers, but in the category of 75+.

Long-distance running is booming. Races open to the public are enjoying record participation levels. Nowadays, anyone who has yet to run a marathon almost needs to have a good excuse handy. Nor do even extreme distances put people off: The 2009 Trans-Europe Foot Race, which started in Bari in southern Italy and ended up at Norway's North Cape, spans a distance of more than 4,488 kilometers (2,789 miles) – with entrants averaging 70 kilometers a day, without a single day's rest. But is this racing boom just a momentary trend that will disappear in a few years? Hardly. For many runners, this activity is rather a case of returning to the original human condition. "As runners, we are fitting into the endless chain of history," Jim Fixx wrote in his "Complete Book of Running."

"We experience what we would have felt had we lived 10,000 years ago and kept our heart, lungs and muscles healthy through continual movement. We reaffirm something that modern man rarely achieves – our kinship with mankind in its earliest days."

Humans Were Born to Be Runners

Some people even view running as the essence of being human. "It is rooted in our collective memory," says South African anthropologist Louis Liebenberg. "Running is the superpower that makes us human." Deep in our inner being, agrees Bernd Heinrich, "we are still runners. We are all natural-born runners." It was put most beautifully of all by the legendary Czech distance runner Emil Zátopek: "Bird flies, fish swims, man runs."

Heinrich, a German-American, is a phenomenon even among the extreme running community. As an athlete, he extends the boundaries of his own performance, while as a zoologist he studies evolution and conducts experiments. Running has been his passion ever since he took to running barefoot behind tiger beetles across sandy trails when he was just six years old.

However, he only started proper training once he was nearing 40. A friend once suggested to him that he might be able to run a marathon in under 2:30. Heinrich began training the very same day. When a doctor urged him to stop on the basis of a degenerative cartilage, he simply ignored both the pain and the warning: "I just imagined how I could slowly but surely grind this small piece of cartilage into powder by intensifying my running." The knee held. He ran his first marathon in 2:25.

But then he switched to even greater distances. His great day came on October 4, 1981: the Chicago 100 Kilometer Run. Bernd Heinrich, 41 years old, wearing no socks, and relying solely on cranberry juice for sustenance, completed the course three quarters of an hour before his nearest rival, setting an American record. He then wrote a best-selling book about his experiences and findings under the legendary title "Why We Run." Heinrich's thesis? For thousands of years man has been an "endurance hunter" who quite literally chases his prey to death in the heat of the day. That concept may sound a bit ridiculous at first, since we carry



around with us the prejudice that man is a master of mediocrity who can do a bit of everything, but nothing very impressively: a bit of swimming, a bit of climbing, a bit of running.

Although that may essentially be true, man is actually superior to all other running creatures in a particular set of circumstances – over extreme distances in great heat. Hares are outstanding sprinters, capable of running at 70 kilometers an hour for up to 45 seconds. That is their salvation, as foxes can briefly reach top speeds of up to 60 kilometers per hour. The fastest land animal of all, the cheetah, typically captures its prey within 30 seconds or gives up the chase. Wolves too rarely pursue their prey for more than a quarter of an hour before risking death through overheating. The best medium-distance runners are believed to be antelopes, with several types capable of covering 10 kilometers in as many minutes. But their lean bodies mean that they lack energy reserves, so after 30 kilometers they are exhausted. That's why well-trained human beings can chase even antelope to death, as long as they do not lose the trail.

The best proof of this is the fact that many indigenous peoples actually practiced endurance hunting until very recently. Ethnologist Barre Toelken recalls witnessing for himself how a Navajo Indian would hunt deer back in the 1950s: "The stag got away from him in wild leaps, and then paused before fleeing once again. By following the track of the animal at an even tempo, the hunter would ultimately exhaust it. He would then approach the exhausted stag, put his hand over its mouth and nostrils, and suffocate it."

Endurance Hunting at 37 Degrees

Anthropologist Louis Liebenberg has himself taken part in an antelope hunt with the bushmen in the Kalahari Desert in Botswana on several occasions. By the end of it, he recalls, "the antelope collapses completely, or slows to the point where it simply stands there with its eyes glazed over. Ultimately the animal is made to overheat." This process requires the hunters to run distances of up to 35 kilometers, non-stop, for between two and seven hours. And this in temperatures of at least 37 degrees Celsius (99 degrees Fahrenheit) – any less and >

Driven to Run



Bernd Heinrich, born in 1940, has achieved fame as a zoologist for his research on bumblebees, wild geese and ravens. He was 40 when he began his career as a marathon and ultradistance runner. Among his best-selling works are "The Mind of the Raven" and "Why We Run: A Natural History." Heinrich lives in a log cabin in Maine (US).

they will not embark on the endeavor as the antelope would be too quick. And this is the crucial point: No other animal is so well adapted to deal with heat. Indeed, man is the world's undisputed perspiration champion. We have even disposed of our hides over the course of evolution to enable water to evaporate off our skin. Our three million sweat glands are capable of expelling up to two liters (0.5 gallons) of water an hour. Many animals are not good at perspiring, while others cannot do so at all. Dogs, for example, are hopelessly inferior to man on hot days as their only cooling mechanism is to pant. A cheetah cannot run for more than two minutes in the sun or it will suffer heat stroke. Evidently, most animals are designed to save water – but the very opposite is true of man. The compensation for this loss of fluid is man's ability to run in exceptional temperatures, which has enabled him to carve out his very own environmental niche.

Perspiring and the loss of his original hide are just the most striking characteristics of man's evolution. "From head to foot we are a mass of adaptations, many of which are irrelevant to the business of walking," argues anthropologist Daniel Lieberman of Harvard University. Here are a couple of characteristics of a long-distance runner:

■ **Bipedalism:** Our two legs allow us to run faster than four. The American cockroach stands up on its hind legs when it is in a hurry – as does the iguana. The fastest middle-distance runners among the dinosaurs were the two-legged variants. But standing up in the heat yields a further benefit: Thanks to an upright stance, the amount of sunlight absorbed by the body is reduced by around 60 percent. On the downside, two-legged animals suffer from the problem of their heads being exposed to the sun, but it is precisely to protect us from this vulnerability that we have a lavish crop of hair. In addition, a special network of blood vessels channels off the heat from our sensitive brains.

■ **The tendons:** These are the storage power plants of the runner. The Achilles tendon absorbs 40 percent of the energy released in every step, which would otherwise be lost, and then releases it again in the next step. For the humdrum business of walking, the tendons have no real importance. "Over the course of evolution, large tendons have developed exclusively in creatures that run," says anthropologist Lieberman.

■ **The buttocks:** Compared to other primates our backsides are huge. Indeed,

man's gluteal muscle is the largest he has. It is subjected to little pressure when walking, but when running it provides stability. All other two-legged runners (such as the kangaroo, for example) have a large tail that serves as a counterweight to a rump that is inclined forward. In man, gluteus maximus fulfills a similar function. In addition, man has a special neck ligament to stabilize the head. This theory is not uncontroversial, however. The problem is that the actual cause of any adaptation in the evolutionary process can never really be proved. This can be illustrated with particular clarity by the many benefits that walking upright entails: the greater view over the savannah after our forefathers rose up from their bellies; the freeing up of hands to enable the use of tools, or carrying children; or even the greater speed when it came to running. What was the actual trigger, and what was simply a welcome side-effect, is difficult to say.

From Carrion to Fresh Meat

What is clear, however, is that man's development into an outstanding runner must have been a long, drawn-out process. Bernd Heinrich reckons that earliest two-legged creatures first used their (initially only modest) speed to get to fresh carrion as quickly as possible. And having acquired a taste for meat, man then began to hunt. The high-energy nutrition provided by meat evidently offered so many benefits that man's running skills continually improved over millions of years.

The development of our brains is also wholly in keeping with successful hunting. Because when it comes to endurance hunting, the art of tracking prey is crucial, since the quarry is initially much quicker and the tracking process requires intelligence. But hunting also requires perseverance and the ability to envisage a future scenario – a typically human characteristic. Here Heinrich talks of the "visionary power" without which man would not have been able to endure all the pain and exertions that accompany the pursuit of an ambitious target. "We can imagine things that lie far in the future," writes Heinrich. "We see our 'prey' before us even if it has disappeared behind hills or in the mist. And it is this vision that becomes our key motivator at these moments. It is the power of visualization that enables us to reach out toward the future, whether our goal is to bring down a mammoth, write a book, or set a new record time in a race." <

Feel Like a Run?



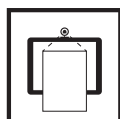
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National Gallery of Victoria, Melbourne

European Masters of the 19th–20th Century on Show

The National Gallery of Victoria in Melbourne is currently exhibiting some 100 European masters from the Städel Museum in Frankfurt, Germany. Masterpieces by German artists are displayed alongside works by French, Belgian, Dutch and Swiss masters from the 19th and 20th century, a period including Neo-Classical, Realist, Impressionist and Symbolist works. Among of the high points of the exhibition are the paintings of Arnold Böcklin, James Ensor, Gustave Moreau, Edvard Munch and Odilon Redon. Another highlight is the presence of 10 works from the unconventional German Expressionist painter Max Beckmann. The exhibition runs until October 20. **de**

www.ngv.vic.gov.au/stadel

Management Change

David Mathers Appointed as CFO

David Mathers, the Chief Operating Officer (COO) and head of Finance of the Investment Banking division has been appointed as Credit Suisse's Chief Financial Officer. He will assume his new function on October 1 and be based in Zurich. Mathers, a British citizen, joined



Photos: Credit Suisse | ProLitteris, Zürich

the bank in 1998 and holds an M.A. in natural sciences from the University of Cambridge. Mathers succeeds Renato Fassbind, who will remain with Credit Suisse as a senior advisor. **de**

Global Education Initiative

Worldfund, a New Partner

The Credit Suisse Global Education Initiative aims to provide thousands of children and young people with an education, and to improve the quality of educational opportunities available to them. In May 2010, Worldfund joined the list of partner organizations selected for this initiative. Working on behalf of disadvantaged children and young people, Worldfund helps to raise the relevance of education in Latin America.

Their project-based learning program in Brazil introduces teachers of mathematics and science to interactive learning techniques and modules, and gives students the opportunity to further their education in math and science through extra training courses. Here, the emphasis is placed on promoting independent thought processes and encouraging interactive learning between teachers and students. Credit Suisse is currently supporting this program in three secondary schools in the city of Recife on the northeast coast of Brazil. A total of 2,400 students are benefiting from the further training on offer to their teachers, and 800 students are making the most of the extra training courses organized. **fdl**

International Human Rights Forum

Human Rights Issues Discussed in Lucerne

In 2009, Credit Suisse forged a partnership with the International Human Rights Forum Lucerne (IHRF) with the goal of promoting human rights issues beyond day-to-day business. The forum serves as a discussion platform for various

personalities from politics, business, the media and the academic world, thereby raising public awareness of human rights issues. On May 18 and 19, 2010, the 7th International Human Rights Forum (IHRF) in Lucerne spotlighted the issue of "Human Rights and Pervasive Computing." In addition to national and international experts such as Iranian Nobel Peace Prize winner Shirin Ebadi, Credit Suisse was itself represented at the forum by a member of the Public Policy – Sustainability Affairs unit. The role

of Credit Suisse in promoting the microfinance sector and the technological development of financial services in developing countries was addressed in a panel discussion. The forum concluded on May 19 with a premiere performance of the IHRF Concert Classic in Lucerne's Culture and Convention Centre. The benefit concert featured piano virtuoso Maria João Pires and the Human Rights Orchestra, comprising musicians from some of Europe's most prestigious orchestras. **fh**



The Picasso exhibition at the Kunsthhaus in Zurich promises to be a high point of its centenary year.

Pictured here are above "Bathers With Beach Ball" (Baigneuses au ballon), 1928, Oil on canvas, 16 x 22 cm, Private collection, and below "Studio With Plaster Head" (Atelier avec tête et bras de plâtre), 1925, Oil on canvas, 97.9 x 131.1 cm, The Museum of Modern Art, New York.



Kunsthhaus, Zurich

Pablo Picasso's First Retrospective – Live Again

Pablo Picasso (1881–1973) had his first-ever retrospective in 1932. The Spanish painter personally assembled the works for the exhibition at the Zurich Kunsthhaus, which ran for three months. The retrospective will be commemorated from October 15, 2010, to January 30, 2011, in an impressive exhibition of over 60 of the top pieces displayed in 1932. Advance sales have already started in anticipation of the large number of visitors. Two other must-see special exhibitions are currently running at the Kunsthhaus: photographs by Thomas Struth (until September 12) and "Motion Picture(s)" by Adrian Paci (until August 22). **schi**
www.kunsthhaus.ch

Credit Suisse Attracts New Assets in the Americas

The bank continues to attract new assets throughout the region. Clients value our expertise, the head of Private Banking Americas Anthony DeChellis says in an interview.

bulletin: During the first quarter of 2010, Credit Suisse Private Banking Americas more than doubled its inflows of new assets to nearly 2 billion US dollars year-on-year. Where does this impressive growth rate come from?

Anthony DeChellis: We continue to attract assets because of the value that clients perceive in a relationship with Credit Suisse. Our clients, particularly the ultra-high-net-worth individual segment, value the expertise of our people, the strength of our investment platform and Credit Suisse's financial strength.

Are there any particular countries outperforming in the Americas?

It's difficult to name just one country, as all areas are contributing. We are well positioned with growing domestic businesses in the United States, Brazil and Mexico. Our traditional international business also continues to perform well.

If I had to pick out one country it would be Brazil. Since we acquired a majority interest in Hedging-Griffo in 2007, we have been able to build out its investment platform and leverage Credit Suisse's increasingly dominant investment banking franchise there. We also have benefited by being able to ride the tailwinds that have established Brazil as a dynamic economic force. Having said that, we also launched private banking operations in Mexico last year and the business is off to a very strong start. In the US, we are doing well too. We look forward to further momentum there, capitalizing on the normalized markets and the economic upturn. Day-in and day-out, across the Americas, we are

bringing on new clients, attracting new assets and recruiting more and more outstanding professionals.

There seems to be a rising global demand for domestic private banking services – so-called onshore banking. Do you feel this trend in the Americas?

Yes, we do. Our clients in Latin America for instance want to have a larger portion of their assets managed domestically, given

“We are well positioned with growing domestic businesses in the United States, Brazil and Mexico.”

the progress their home countries have made in terms of economic reforms. Their capital markets are increasingly robust and their economies growing. This is a very positive development for these markets.

That being said, the international business is here to stay. Our clients will always want access to investments abroad and take advantage of the stability and investment expertise that the US and Switzerland in particular represent.

Multishoring – a blend of domestic and international private banking services – is also in demand. What exactly are you offering in this area?

In short, we have to be where our clients want us to be. We have to be able to deliver the bank's expertise to them wherever they are.

This means being an established player in clients' home markets, offering investment opportunities abroad, and providing clients access to the intellectual capital of the investment banking and asset management divisions as well. Because our wealth management clients in the US and in Latin America are principally entrepreneurs and executives, they align well with these other parts of Credit Suisse's offering.

How many relationship managers do we have on the ground in the Americas?

565 throughout the Americas. In the US we have added more than 130 over the past 18 months and right now have about 400 relationship managers in total. The right number would probably be between 500 and 700. In Latin America we continue to selectively hire as well. Our priority is to hire the best, the top talent in the industry. So for us it's not a numbers game, but rather a quality game. We have been very successful in hiring highly talented people, but there is more to do.

Is it difficult to find the right people?

Yes, attracting top talent is never easy, but Credit Suisse is arguably the finest institution in the world at which to work if you are interested in wealth management. Wealth management is at our core and it has been for more than 150 years. I am confident that we are in the best position among our peers to attract and retain top talent.

Have the needs of Credit Suisse's private banking clients changed as a result of the recent financial crisis?

Their core needs are the same, but the current environment has heightened their focus in some areas. For instance, clients today are very focused on the financial strength of the bank they are doing business with. Credit Suisse has weathered the crisis well. We are in an excellent shape with the best capital ratios in our industry; our clients take great solace in that.

An equally important focus area is the quality of advice. It's clear that the crisis has raised the value of good advice. Clients truly value expertise, value that our relationship managers helped them get through a difficult time. That plays to our strengths, because of the quality of our people.

How do you train the relationship managers to meet these more sophisticated demands?

To start, we are strategic about who we hire. We have brought on very seasoned candi-



Anthony DeChellis has been the head of Credit Suisse's Private Banking Americas since 2006.

Profile

Anthony DeChellis took over the role as head of Private Banking Americas in 2006, at the same time becoming a member of the Private Banking Management Committee. He has since focused on building domestic businesses in the US, Brazil and Mexico, as well as evolving Credit Suisse's international business with a focus on ultra-high-net-worth individuals and families. Previous work experience includes 16 years at Merrill Lynch, where he led numerous business areas, including the European private client business and then in the US heading the firm's Family Office, Private Planning, market strategy and development. He spent 3 years at UBS as head of US Private Wealth Management. DeChellis is a graduate in economics from Rollins College in Florida and also holds an MBA from the University of Chicago. Now 46, he enjoys spending time with his four children, ages 8 to 14, and being involved in their sports and activities. DeChellis also enjoys golf, scuba-diving and deep-sea fishing.

dates, who usually have very high formal educations and deep experience in dealing with ultra-high-net-worth individuals and families. In tandem with that we ensure that all of our relationship managers are kept up-to-date and well trained. Even the best people can be taken to new heights.

Additionally, our relationship managers are supported by the right experts. The relationship manager begins the process of understanding the needs of the client and then the experts come in to help deliver a comprehensive set of wealth management solutions.

What are the main challenges today, now that economy is picking up?

When I think about the key challenges, I think about our industry in general. The generally negative perception about banks is a challenge, but it plays to our strengths given Credit Suisse's performance and how we've come through the crisis. That being said, the entire industry has to win back trust. Trust is the foundation upon which any industry, but particularly the financial services industry, is based. Rebuilding trust will take time. There are no shortcuts. It needs to be done client by client and over time.

Will the regulatory changes currently being discussed in the US have a major impact on the bank's private banking operation in the US?

Clearly, there will be increased regulation that will have an effect on the business as a whole. What that effect will be is unknown at the moment, so we'll have to wait and see. However, we don't need to wait for new regulation to continue to do the right things for our clients. This is and has always been our focus.

What is your ambition for your business?

Our ambition at Credit Suisse's Private Banking division is identical around the world: to become the world's most admired bank for wealth management clients, and to be the industry leader in terms of client satisfaction, employee engagement, profitability and growth.

How will we get there? By putting our clients first, and by focusing on the long term. We also have to deliver first-class advice, complemented by superior solutions, and offer all the capabilities at hand within Credit Suisse in order to preserve and grow our clients' wealth. It always comes down to people, however. If we can attract and retain the best talent in our industry, our success will be assured. **Dorothee Enskog**

Regulation Will Influence The Future of Banking

The future of banking was one of the topics discussed at the first Middle East Speaker Series hosted by Credit Suisse in Dubai. The increased importance of the Arab world within the global economy was another subject presented.



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1 Investors, clients and government officials attended the Credit Suisse Middle East Speaker Series in Dubai. 2-3 Professors Robert Aliber and Marvin Zonis from the University of Chicago Booth School of Business were among the keynote speakers. 4 The CEO of Credit Suisse Brady W. Dougan was also present.

The last 40 years have been the most turbulent in 300 years of monetary history, with four waves of financial crises sweeping through the financial system during this short period of time, said Robert Aliber, professor emeritus of international economics and finance at the University of Chicago Booth School of Business, during his speech. The first wave took place in 1982 when the MBA countries – Mexico, Brazil and Argentina – and other developing countries were the worst affected, the second in the early '90s with Japanese, Swedish, Norwegian and Finnish banks in the spotlight, the third in 1997 with Asian banks being most hit, and the fourth is the most recent crisis that the world is emerging from at the moment. "Each of these crises was preceded by a credit bubble and in some cases also by an asset bubble," Aliber noted.

Virtually all countries that had a credit bubble experienced a massive inflow of money from abroad, which led to unsustainable growth in the credit supply, this in turn triggered unsustainable growth in asset prices – usually real estate prices. "A large number of financial institutions went bankrupt during these periods of turmoil, not because of strategic mistakes or the existence of complex financial instruments, but because they misread the financial environment."

Tougher Regulations Ahead

These recent crises have triggered major changes within the financial industry: The number of banks headquartered in countries such as the US, Japan, the UK and Germany has declined as result of mergers or bankruptcies. Other fundamental changes are the increase in the global activities of many banks and a sharp rise in the number of products and services offered to clients. "Many banks have turned into financial department stores and do not focus on their core business, deposits, any longer," Aliber stressed. To reduce the likelihood of further financial bubbles and the failure of large financial institutions, the political response is to strengthen regulations. Political leaders are trying to limit the activities of banks, by separating narrow banking activities (typically deposits) from other activities such as trading and underwriting. "The cost of such regulations can be seen as a tax on deposits. They reduce the rate of return that banks can pay on their deposits and are just likely to make banks move to the legal jurisdictions

with the least severe regulations," Aliber underlined. I am rather ambivalent about the development of tougher financial regulation. We've had 200 years of financial regulations and still have financial crises occurring at regular intervals."

New Role for the Middle East

The Middle East has suffered from the curse of "free money," said Marvin Zonis, professor emeritus of business administration at the University of Chicago Booth School of Business during his presentation. It is difficult to get people to work and to get entrepreneurial activity going when oil money is available. The region does however have the capacity to play a far greater role in the global economy as well as in other emerging markets. "The Arab world is encouraged to take a more activist role within the global economy. I believe this will occur, though not in the Middle East itself. The funds will tend to flow out of the region in the coming years. Large amounts of investments will move from the Middle East to emerging markets such as Brazil, India, China, Indonesia (BICI) and Africa." According to Zonis, these four BICI countries all have extremely impressive growth stories. Investors should however not bet on Russia, as its gas dominance will decline over time, now that unconventional gas types such as shale gas are gaining in importance. **Dorothee Enskog**

Middle East Speaker Series

The newly created Credit Suisse Middle East Speaker Series is an annual forum offering an expert's perspective on diverse topics for clients, investors, government officials and professionals from the region's financial community. The first edition was held in Dubai in May 2010.

Masthead

Publisher
Credit Suisse AG
P.O. Box 2
CH-8070 Zurich
Tel. +41 44 333 11 11
Fax +41 44 332 55 55

Editors
Daniel Huber (editor-in-chief, dhu), Marcus Balogh, Dorothee Enskog (de), Fabienne de Lannay (fdl), Mandana Razavi (mar) and Andreas Schiendorfer (schi)

E-mail
redaktion.bulletin@credit-suisse.com

Contributors to this issue
Ute Eberle, Angela Harp, Fabian Huwylar (fh), Ian Lewis, Max Nyffeler, Matthias Plüss, Stefanie Schramm, James Sweeney, Rob Scott, Claude Settele, Bernhard Van Dierendock, Robert Weissenstein and Jessie Zhu

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Marketing
Veronica Zimnic

Proofreading
Text Control, Zurich

Translations
Credit Suisse Language Services

Design/Layout
www.arnold.inhaltundform.com:
Arno Bandli, Raphael Bertschinger, Benno Delvai, Monika Häfliger, Karin Cappellazzo (project management)

Advertising
print-ad kretz gmbh, Andrea Hossmann and Esther Kretz, General-Wille-Strasse 147, CH-8706 Feldmeilen, Tel. +41 44 924 20 70, bulletin@kretzgmbh.ch

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Editorial committee
Richard Bachem (head of Marketing, Private and Business Banking Switzerland), René Buholzer (head of Public Policy), Urs P. Gauch (head of Corporate Clients Switzerland – Large Corporates), Fritz Gutbrodt (Chairman of Credit Suisse Foundation), Anja Hochberg (head of Investment Strategy Asset Management), Angelika Jahn (Investment Services & Products), Bettina Junker Kränzle (head of Internal Corporate Publishing & Services), Hanspeter Kurzmeyer (head of Private Clients Switzerland), Martin Lanz (Economic Research), Andrés Luther (head of Group Communications), Charles Naylor (head of Corporate Communications), Christian Vonesch (head of Private & Business Banking Aarau)

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Latin American Opportunities

What opportunities does Latin America offer within the region and externally? The former President of Mexico Dr Ernesto Zedillo discussed this issue at the sixth Credit Suisse Salon held in Zurich in June. He gave us some further insights in an interview.

bulletin: What opportunities does Latin America offer locally and to the rest of the world?

Dr Ernesto Zedillo: Latin America is a region of more than 550 million people and a gross domestic product (GDP) of more than 6 trillion US dollars. The per capita income of its largest countries is well above that of other emerging countries including the Asian giants, China and India. The great majority of the Latin American countries today enjoy an economic and political stability that has not been seen in the region for decades. Although it has happened relatively slowly, the Latin American economies have become increasingly integrated both among themselves and with the rest of the world. As that integration progresses, Latin America will consolidate into a formidable and highly dynamic market provided that the process of economic reform continues.

So, how does this relate to the current economic climate in Latin America?

Most of the countries in the region have emerged from the great global crisis of 2008

and 2009 with a new sense of confidence. They withstood the immense shock fairly well thanks to stronger fundamentals nurtured over previous years. If the global economy cooperates, then we can look forward to good economic performance in the majority of the countries for the immediate future.

In terms of maintaining economic stability in the region, what are the biggest challenges?

Latin America must do better in terms of economic growth in order to solve more quickly its poverty problems, which are still acute. Since it is reasonable to assume that it is hard to increase the savings and investment rates in the short term, then a stronger emphasis must be given to those reforms that would make our economies more productive in the use of the available labor and capital.

Enhanced flexibility and competition in the goods and labor markets can significantly increase the growth potential of our economies. There are still significant barriers to entrepreneurial activities in the formal sectors of our economies and severe rigidities in the

labor market. Our countries have a strong policy-induced bias against the most productive activities. It's very hard to create (and liquidate) new enterprises and it's very expensive to hire labor. People end up working in the informal sector, which is inefficient and low paying for workers. This explains the high proportion of the labor force employed in the informal sector of the economy.

Where do the major opportunities for growth lie? Are there any particular sectors profiting?

There is not a unique pattern of comparative advantage throughout the region. Depending on size, level of development and endowment of natural resources, each country provides its own specific opportunities.

The largest economies are now significantly diversified and offer considerable opportunities across the board for their internal markets as well as attractive locations for pieces of the global supply chain of manufactures and services. Some of the countries, by virtue of their rich natural resources, are already and will continue to be major commodity suppliers in world markets.

How can the poorest Latin American countries reap the benefits of globalization without having to experience internal inequalities?

Engaging more actively in globalization need not worsen inequality. Quite the contrary, a dynamic and open economy can be the way to overcome poverty and moderate inequality, provided poor people are empowered through education and economic freedom to participate in the modern sectors of that economy.

In your opinion, which Latin American countries stand out in terms of economic strength?

Obviously, those countries with the largest economies, Brazil and Mexico, stand out in some ways. These two alone produce 60

Credit Suisse Salon The Credit Suisse Salon is a platform where leading decision-makers, clients and the bank's top management meet to discuss various economic, political and social themes. The salons, which are held up to three times a year in different locations around the world, offer a unique opportunity to the participants to obtain first-hand information from the invited speakers. The next Credit Suisse Salon will be held in Abu Dhabi in September, with the economist Nouriel Roubini as guest speaker. He will focus on the ongoing power shifts between global institutions, in the international monetary system and in world trade. **de**



The former President of Mexico Dr Ernesto Zedillo is confident about Latin America's future. The region's per capita GDP is well above that of other emerging countries, and the growth prospects remain strong.

Profile

Dr Ernesto Zedillo was born in 1951 in Mexico City, where he went on to study economics at the National Polytechnic Institute. He pursued his PhD at the University of Yale and then worked at the Central Bank of Mexico. In 1987, Zedillo joined the Mexican government as Under-Secretary of Budget. He was appointed Secretary of Economic Programming in 1988 and in 1992 Secretary of Education. Zedillo resigned a year later to run for the Mexican presidential election, which he won. He served as the country's president between 1994 and 2000. Since leaving office, Zedillo has been a leading voice on globalization – particularly with regard to the relations between developed and developing nations. Today he heads the Yale Center for the Study of Globalization and teaches economics at the same institution. de

percent of the region's GDP. But it would be a mistake to overlook the importance of the other Latin American economies. Each one of them offers attractive business opportunities. A special mention should be made of Chile for the quality of its economic policies and its impressive record of growth and stability.

How would you compare these growing countries to Asia's emerging markets?

At this moment, the Asian emerging markets are growing faster than the Latin American ones, but given our higher per capita income

“Our [Latin American] economies cannot be overlooked as significant markets.”

and still significant growth prospects, our economies cannot be overlooked as significant markets.

What about the financial sector? How did it weather the recent financial crisis?

Our financial systems did well relative to their counterparts in most developed countries. Prudence, learned the hard way in past crises, paid off handsomely. As for growth, financial development is uneven across the region. In many of our countries, financial services are not yet available to a significant proportion of the population.

Provided some institutional reforms are put in place, this circumstance poses an opportunity for future growth in this sector.

Is regulatory reform necessary?

Financial regulations were adequate for this crisis, but nothing guarantees that they will be for the next. Authorities must be attentive to the reforms now being discussed in other countries and multilaterally and adjust accordingly. We must avoid falling prey to the regulatory arbitrage that in all likelihood will soon be exacerbated.

What are some of most pressing issues for Latin America in the coming decade?

Achieving higher economic growth and reducing poverty more decisively are two sides of the same coin of development. They must be pursued persistently in the region. But the future looks bright, provided we recover from the reform fatigue that seems to have affected us over the past couple of years.

Angela Harp



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1 Presenting an exciting program (from left): Thomas Oberender (theater), Markus Hinterhäuser (concerts), festival president Helga Rabl-Stadler, artistic director Jürgen Flimm, business director Gerbert Schwaighofer. 2 Max Reinhardt at a rehearsal in 1936. 3 Jonathan Meese with a stage model for "Dionysos."

Dedicated to the World's Classics

The Large Festival Hall will turn 50, the Salzburg Festival will mark its 90th anniversary, and Credit Suisse will celebrate the fifth year of its partnership with what is probably the world's most important summer arts festival. Myths will be explored and young talent will be discovered – from July 25 to August 30.

The first Salzburg Festival was held on August 22, 1920, presenting Hugo von Hofmannsthal's drama "Jedermann," directed by Max Reinhardt. It was still in the shadow of the Great War. The festival's founders, who included Richard Strauss, Franz Schalk and Alfred Roller, wanted to bring about "spiritual peace," and give new expression to a belief in Europe as "the foundation of our spiritual existence."

Events of the last 90 years may have engendered uncertainty and rocked this foundation, but there has always been a well-spring of hope. The arts, and the Salzburg Festival in particular, have offered many shining moments, giving audiences supreme pleasure and presenting, in the words of the original plan, "operas and plays of the highest standard." Over time, the festival has become increasingly international, moving further away from its purely European focus.

Visitors From Around the World

In 2009, the festival welcomed 248,657 visitors from 68 countries. And its artists had an equally broad provenance. Last year, Daniel Barenboim's West-Eastern Divan Orchestra presented "Fidelio," the opera of liberation. This year will welcome back the World Orchestra for Peace (WOP) under the baton of Valery Gergiev; Credit Suisse sponsored the ensemble's 2005 tour of London, Berlin, Moscow and Beijing. In Salzburg, on August 5, the WOP will perform symphonies no. 4 and 5 by Gustav Mahler, who was born 150 years ago (on July 7, 1860) in the Bohemian village of Kalischt.

The festival has been inspired since its inception by "die Freuden Mozartscher Reinheit und Schönheit" (the joys of Mozart-like purity and beauty). And August 9 will see the premiere of Wolfgang Amadeus Mozart's "Don Giovanni," conducted by Yannick Nézet-Séguin and directed by Claus Guth. The Salzburg Festival's regular orchestra will be playing: the Vienna Philharmonic. Credit Suisse has had a long-stand-



A 2006 gift to the Salzburg Festival from Credit Suisse: "1,000 Tears" by Not Vital.

ing partnership with the ensemble. In its capacity as residential sponsor, the bank has enabled this world-class orchestra to perform at the Lucerne Festival since 1993. Since 2000 the Vienna Philharmonic has played an important part in judging and presenting the 75,000-Swiss-franc Credit Suisse Young Artist Award, which this year goes to cellist Nicolas Altstaedt.

The Salzburg Festival is the place to be every summer. For example, Anne-Sophie Mutter, slated to be the Mary and James G. Wallach artist-in-residence with the New York Philharmonic next season (page 41), will be performing Wolfgang Rihm's "Gesungene Zeit" in Salzburg on August 8 and 10. This brings us to the festival's recipe for success: In addition to adding to its core repertoire, it is never afraid to venture into new territory with works by composers such as Scelsi, Sciarrone, Varèse and Rihm.

July 27 will see the world premiere of Wolfgang Rihm's opera "Dionysos," finished right on time, but not a day sooner. Credit

Suisse will be dedicating its traditional summer encounter for journalists to this work, as well as the lead interview in this issue of bulletin (see page 62).

Elektra and Lisa della Casa

"Myth: Where God and man collide, tragedy ensues." Inspired by the festival's motto, other works this year encourage us to look back – and inward. One example is "Elektra" (premiering August 8) by Richard Strauss and Hugo von Hofmannsthal, under the direction of Daniele Gatti, principal conductor of the Zurich Opera House. This will be the sixth production of "Elektra" at the Salzburg Festival. Last time, in 1996, it was conducted by Lorin Maazel; the first time, in 1957, Swiss soprano Lisa della Casa sang the part of Chrysothemis.

Up until 1960, della Casa sang 20 roles in Salzburg Festival productions. She performed at the festival for the first time in 1947, as Zdenka in Richard Strauss' "Arabella." Eleven years later, in 1958, she gave an unforgettable performance in the title role of this musical masterpiece; a recording can be heard in the archive of festival documents. Visual documentation will be included in an exhibition featuring Lisa della Casa and the Salzburg Festival. The display will be held at Paradeplatz, Zurich, and is scheduled to run until August 13.

Salzburg also gives visitors a glimpse of the future, as young artists get the final polish for careers that will take them to most of the great concert halls and theaters. For the first time, a young conductor will be receiving an award at the festival. The Young Directors Project, on the other hand, has been run as a competition for some years now. Credit Suisse has been involved with the Young Singers Project since last year: They're all winners here – not only the eight participating singers, but the public as well, who are invited to four master classes and the final concert on August 26, an experience not to be missed. **schi**

First Stage Experience for Eight Young Singers

Young, relatively inexperienced singers are being suddenly thrown into the limelight as a result of the media's unceasing demand for artists without any wrinkles. The Young Singers Project at the Salzburg Festival provides these singers with valuable practical experience.

The program is open to talented young artists under the age of 30. The aim is to make these singers known, position them on the international scene, and give them additional experience. "This is exactly what young singers very much need – hands-on experience on the opera stage," the director of the Young Singers Project, the mezzo-soprano Marjana Lipovšek, explains. "Young singers are today being catapulted onto the opera stage with very little experience, as there is an increasing demand from the media and leading recording houses for young, attractive and beautiful singers without any wrinkles. On top of this, the audience nowadays has access to numerous exceptional recordings of the operas they are attending. They can easily compare the live performance of the singers with the recordings they have at home. This puts intense pressure on young opera singers."

The eight laureates have an intensive summer of training ahead. Individual singing classes will be given by Lipovšek and her husband, the bass Alfred Burgstaller. Four master classes open to the public will also be held. These will be taught by well established singers, including the German mezzo-soprano Christa Ludwig and the English baritone Sir Thomas Allen. Irrespective of its name, the Young Singers Project focuses not only on vocal training. Drama, movement, dance and language classes, taught by professional actors and dancers, are also an integral part of the project.

Our young talents will be able to attend stage rehearsals and go behind the scenes of the Salzburg Festival to see how professional singers prepare themselves for their roles. This type of first-hand experience is invaluable. They will really be able to see what type of errors they should beware of

on stage," Lipovšek adds. By attending rehearsals, the laureates will gain experience in working with prominent producers, directors and colleagues.

Sharing Long Experience

The renowned singer Marjana Lipovšek has taken on the role as the Young Singers Project's director, driven by the desire to share her long experience. "When I was younger, established opera singers offered me invaluable advice, and I appreciated that very much," stresses Lipovšek. She has strong ties to the Salzburg Festival, where she has performed in more than 80 opera productions, concerts and lieder recitals over the past 30 years.

"To become an exceptional opera singer is not something that is learned overnight or over a 10-year period. It's almost a lifelong learning process, connecting the body and the soul to the song. A singer actually does not reach the height of his or her singing abilities before the age of 40 or 45, if not 50," says Lipovšek, who will act as the Young Singers Project's director until 2012, perhaps longer. "To be leading such a project is a unique experience."

Tough Selection Process

Admission into the Young Singers Project is highly coveted and seen as a mark of quality. The singers are selected through a series of auditions held around the globe, from Chicago to Salzburg. "The voice quality is the most important selection criterion. The singer needs to have a voice with a certain maturity," says Lipovšek, who took part in this year's selection procedure. "Another criterion is that the singers can fill the roles that we will be studying."

This year, the laureates will prepare opera roles found in Mozart's "Don Giovanni," Richard Strauss' "Elektra," Charles Gounod's "Roméo et Juliette" and Christopher Gluck's "Orfeo ed Euridice." The 2010 edition of the Young Singers Project ends with a final concert in the large auditorium of the Mozarteum Foundation in Salzburg on August 26 at 6 p.m. All eight singers – Lena Belkina, Claudia Boyle, Vladimir Kapshuk, Antonio Poli, Emily Richter, André Schuen, Regine Isabella Sturm and Erika Wueschner – will perform, accompanied by the Mozarteum Orchestra Salzburg, conducted by Ivor Bolton.

Dorothee Enskog



A committed teacher: Marjana Lipovšek with Christina Daletskaya (2009).

New York Philharmonic Makes Its First Visit to Georgia and Lithuania

The oldest US symphony orchestra and Credit Suisse have extended their partnership up to the end of the 2012/13 season. Their collaboration is reinforced by support for an annual international educational project.

The year 1842 made cultural history, marking the founding of the New York Philharmonic and the Vienna Philharmonic, two of the world's oldest and most renowned orchestras. The Berlin Philharmonic (1867), the Tonhalle Orchestra Zurich (1868), the Royal Concertgebouw Orchestra in Amsterdam (1888) and the London Symphony Orchestra (1904) were formed much later; but there are of course a few orchestras that are even older, for example the Sächsische Staatskapelle Dresden or the Gewandhausorchester Leipzig. In terms of the number of performances, however, the New York Philharmonic is indisputably the frontrunner. On May 5, 2010, the orchestra broke its own world record with its 15,000th concert, another highly acclaimed musical milestone.

The New Philharmonic Festival

The anniversary concert was part of the three-week-long Philharmonic Festival, newly created by Alan Gilbert, which was held in the Avery Fisher Hall at Lincoln Center and devoted this year to Igor Stravinsky. Eighty-five years ago, the famous Russian composer made his American conducting debut with the New York Philharmonic. The festival, including the anniversary concert, was led by Valery Gergiev. The artistic director of the Mariinsky Theatre in St. Petersburg and principal conductor of the London Symphony Orchestra is of course well known in New York, where he served as principal guest conductor of the Metropolitan Opera from 1997 to 2008.

Since its establishment, 1,590 musicians have been members of the New York Philharmonic, and its 15,000 concerts have been attended by an audience of nearly 47 million. And an even greater number of music lovers have heard the orchestra indirectly, of course, as probably no other ensemble in the world has made as many recordings. The orchestra has been featured on the radio virtually



1 Alan Gilbert, the orchestra's music director, has been leading the orchestra since 2009.

2 The New York Philharmonic broke its own world record on May 5, when it held its 15,000th concert.

nonstop since 1922, and it now boasts an award-winning podcast series.

Partnership Extended by Three Years

Gary W. Parr, Chairman of the New York Philharmonic, Zarin Mehta, the orchestra's president and executive director, and Paul Calello, Chairman of Credit Suisse Investment Banking, took the anniversary concert as an

opportunity to announce that their global partnership would be extended by another three years, until the end of the 2012/13 season. Credit Suisse has been a fantastic partner for the New York Philharmonic, explained Parr, who described it as a company with a commitment to quality, integrity and innovation.

The well-known actor Alec Baldwin, who presents the orchestra's radio broadcasts, >

remarked on the importance of sponsors for classical music and emphasized: "We can't thank Credit Suisse enough for what they do for the arts, and especially for the arts here in New York."

Paul Calello, who has joined the board of the New York Philharmonic, underlined the significance of the partnership, and the extraordinary experiences it offers clients, staff and the community at large. He pointed out that the orchestra also makes a great contribution to New York as a lively and innovative institution and said that its extensive touring made it "an American treasure that is highly regarded around the world."

The partnership extends to all the orchestra's concerts worldwide and two tours each year. Since the start of the partnership, the bank has also made it possible for New Yorkers to attend the Philharmonic's dress rehearsal for free on the opening day of each concert season.

Promoting Talent and Education

As Toni J. Krein, head of Corporate Cultural Sponsorship at Credit Suisse, explained, supporting young talent is a top priority for the bank. Accordingly, Credit Suisse also pursues this goal in the cultural institutions it supports by helping them nurture new musical talent. The New York Philharmonic has an extensive young talent program, both in New York and internationally. Credit Suisse and the New York Philharmonic have inten-

Musical Milestones

2010

May 5: 15,000th concert, Valery Gergiev

1982

July 3: 10,000th concert, Zubin Mehta

1959

December 13: 5,000th concert, George Szell

1916

May 3: 1,000th concert, Josef Stransky

sified their collaboration by supporting an annual international educational program lasting several months, in conjunction with the orchestra's tours.

Europe/Autumn 2010 Tour

This educational program will be held for the first time on the May 2011 tour. Before this, however, the orchestra will undertake its Europe/Autumn 2010 tour. Between October 21 and November 4, it will visit eight European countries, including, for the first time, Lithuania and Georgia. Georgian-born

violinist Lisa Batiashvili has been engaged as a soloist for the concerts in that country. In Germany, Serbia and Luxembourg, Leonidas Kavakos will be performing the Violin Concerto by Jean Sibelius. A third instrumentalist can be heard in Warsaw: the as yet unannounced winner of the 2010 International Frédéric Chopin Piano Competition.

Ever since its very first year under the stewardship of music director Alan Gilbert, the orchestra has collaborated closely with a composer and two artists. The Finn Magnus Lindberg, whose composition "EXPO" made its successful debut on September 16, 2009, will be the Marie-Josée Kravis composer-in-residence in the coming season, and will compose another work.

In addition, on October 7 Lindberg's "Kraft" (1985) will have its New York premiere. Lindberg will also be directing two "CONTACT!" programs on November 19–20 and December 17–18, with Alan Gilbert conducting. Not only will compositions by James Matheson, Jay Alan Yim and Lindberg himself have their world premiere at these events, but the composer-in-residence will also give listeners an introduction to the program and discuss it with them.

Anne-Sophie Mutter in New York

Following on the heels of the baritone Thomas Hampson, the German violinist Anne-Sophie Mutter has now been engaged as the Mary and James G. Wallach artist-in-resi-



A historic occasion in May 2010: The New York Philharmonic's 15,000th performance. Nearly 47 million people have attended its concerts over the years.

dence for the 2010/2011 season. Anne-Sophie Mutter performed with the orchestra for the first time in 1980, and accompanied it on its European tour in 1996. Her most recent performance with the New York Philharmonic was on April 2, 2009, under the baton of Kurt Masur.

On November 18, Anne-Sophie Mutter, a renowned interpreter of Mozart and Beethoven, will perform the world premiere of "Lichtes Spiel" by Wolfgang Rihm (see interview on page 62), and on June 2, 2011, Sebastian Currier's "Time Machines." She'll also appear on April 3 with the bass Roman Patkoló, in the world premiere of two chamber music compositions by Wolfgang Rihm and Krzysztof Penderecki.

Finally, the three-week Philharmonic Festival will be held again in March next year. It's entitled "Hungarian Echoes," and will feature the famous Finnish composer Esa-Pekka Salonen as guest conductor.

Another noteworthy performance will be the 100th concert given by pianist Emanuel Ax as a soloist with the New York Philharmonic, scheduled for April 2011. Shortly after that, in June 2011, Alan Gilbert will be conducting "The Cunning Little Vixen," by Leoš Janáček.

Informative Web Site

The detailed program for the new 2010/11 season can be found at <http://nyphil.org>, the Web site of the New York Philharmonic. schi

Photo: New York Philharmonic



The New York Philharmonic and Alan Gilbert

For the third time, Credit Suisse, in its role as global sponsor, will be accompanying the New York Philharmonic on its European tour. The orchestra will give concerts in nine cities in eight countries. The European cities the ensemble visited in 2008 and 2009 are also shown on the map below.

Europe/Autumn 2010 Tour

October 21

Tiflis

Georgia

October 22

Batumi

Georgia

October 24

Belgrade

Serbia

October 26

Ljubljana

Slovenia

October 28–29

Warsaw

Poland

October 30

Vilnius

Lithuania

November 1

Hamburg

Germany

November 2

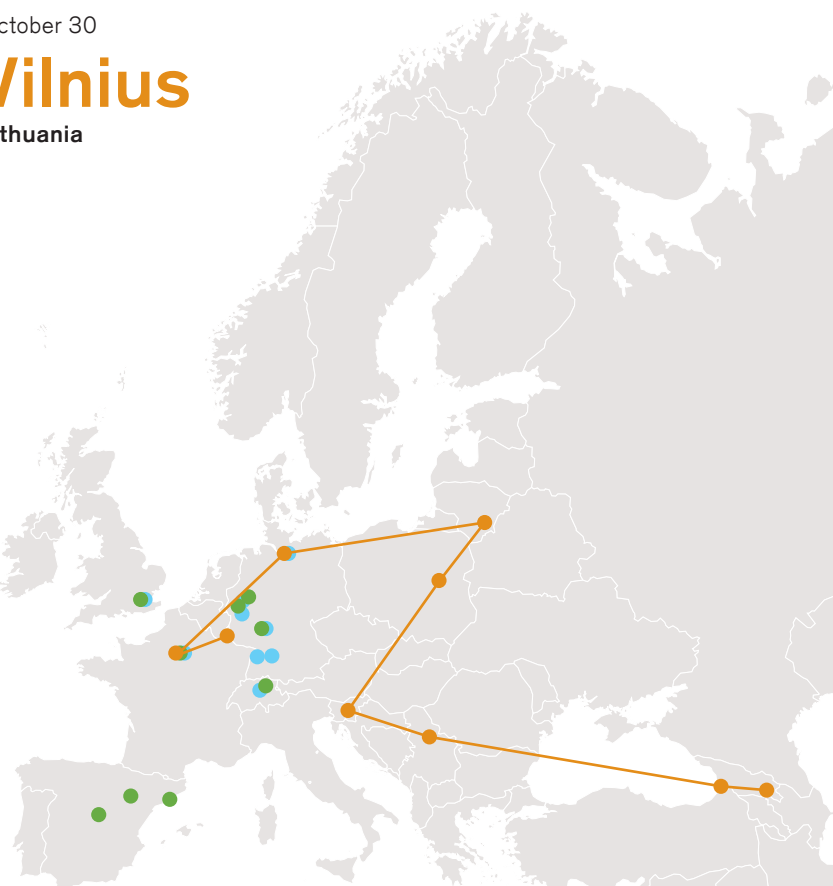
Paris

France

November 3–4

Luxembourg

Luxembourg



2008 2009 2010

An Education for Tanzania's Nomad Children

Tanzania's nomadic pastoralists' way of life is under threat, as they compete with settled communities for increasingly scarce natural resources. If they are to prosper in a fast-changing environment, it is however vital that their children go to school. An education project is opening up new opportunities for these children.

One of the United Nations' Millennium Development Goals, intended to help eradicate poverty from the planet, is to ensure that all the world's children are able to complete a full course of primary schooling. Progress has been made: Between 1999 and 2006, the number of primary-school-age children around the world who are not attending school fell from 103 million to 73 million. Much remains to be done, especially in Africa, where more than 35 million children are still not attending primary school.

Nowhere is solving this problem more difficult than among the pastoralist communities in Africa. The nomadic herders' way of life is under threat, but their distinctive cultures and local languages marginalize them from the mainstream and make it difficult for their children to integrate into a formal education system. The situation is improving, thanks to partnerships between local authorities, non-governmental organizations (NGO), charities and their sponsors.

New Opportunities

In Tanzania, the charity CARE, supported by Credit Suisse, has been seeking to bring more children from pastoralist communities into mainstream education. Since December 2008, CARE and Credit Suisse have been cooperating on a project helping 3,500 children in four communities in Tanzania's southern-central Morogoro region to access quality primary education. School infrastructure has been improved. The quality of teaching and learning, and the community ownership and engagement in education have been strengthened. A local NGO, SAWA, is assisting in the implementation and monitoring of the project.

"The pastoralist communities increasingly realize how important it is to educate their children to ensure their future livelihoods," says Stephanie Baric, program

manager with CARE. "Parents haven't necessarily stopped migrating, but they are starting to allow their children to stay behind and continue their education uninterrupted." This is reflected in the number of pupils enrolled in the four schools managed within the project: Enrollment rose 33 percent between March and October 2009 to 1,066 students. This figure was reached before the full range of structural improvements and community mobilization efforts had been put into place.

Girls in Focus

The schools are mixed, but special emphasis is placed on persuading girls to be allowed to go to school, given that here, as in many other regions of the world, it is the girls that tend to be held back from education, so they can perform domestic and work duties for their families. Mariam Seleka, the second-oldest child in her family, is one among the girls benefiting from the project. She enrolled in primary school, together with her older brother Majuku in 2006, but was taken out of school just a year later. "I could not continue because my parents could not af-

ford to buy uniforms or pay school fees for me and my brother. My parents had to choose whether I would continue with school, or Majuku. Since Majuku is a boy, he was allowed to stay in school. I was not happy to remain home, but I had to accept it. I could do nothing. At home, I had to fetch water, collect firewood, cook for the family and look after my younger brothers and sisters." As a result, Mariam did not have the time to learn to read or write properly.

But when CARE and SAWA came to her village and started one of their non-formal education (NFE) centers, she could resume her primary schooling. "I learned to read and write, so I could go back to my regular school. When I returned, I was amazed to see the difference. The teachers seemed more interested and better prepared. And we had new supplies. We even have a library, with books and newspapers at hand. Now I use my spare time to read stories to my friends and my younger brothers and sisters, so they can learn to read and write, just like me!"

Long-Term Commitment

It is not enough to merely throw money and materials at the problem, says Eva Halper, in charge of the Global Education Initiative at Credit Suisse, who has visited these nomadic communities. "Any project like this really needs a long-term commitment to see what the impact is. It is important not only to provide schools and teaching materials, but to make sure that the 'so what' question is answered. You may have built a school, but the question is: Do the kids like school better? Are they obtaining better results?"

Supporting Education Globally

The Tanzanian project is part of the Credit Suisse Global Education Initiative, which supports international development organizations improving education opportunities for 45,000 young people worldwide. Launched in 2008, the initiative uses approaches tailored to local contexts. Credit Suisse currently supports six international development charities: Camfed, CARE, Plan International, Room to Read, Teach For All and Worldfund. These charities are implementing programs that address educational challenges by breaking down barriers to access, improving the quality and relevance of education, and also by promoting ownership of projects by the local community. Credit Suisse provides multiyear grants to help the charities strengthen and expand their programs, as a long-term commitment to education projects is essential if their potential is to be realized.

www.credit-suisse.com/citizenship/en/initiatives



1



2



3

1 A Masai home known as "boma" in the hamlet Nyakonge in Tanzania's Morogoro region. It lodged approximately 50 family members at the time when the picture was taken. **2** This is one of the classes under construction at the Mwenge primary school in the Morogoro region, with students sitting behind desks provided by CARE. **3** Students answering questions from CARE staff members during one of the monitoring visits carried out at the Mwenge primary school, one of the schools supported by Credit Suisse.

What does it mean for their hopes for the future?" The project not only involves the construction and maintenance of school infrastructure, but also the development of a curriculum in conjunction with Tanzania's Ministry of Education. This formal program will permit pupils to move up smoothly into the state secondary school system. Teacher training is another vital component of the project, as the local communities lack suitably trained staff. Those who come from settled communities elsewhere not only need to be trained as teachers, they must also be made aware of issues that affect pastoralists, so they understand the needs of their pupils better. In addition, the teachers need to be given incentives, such as decent accommodation, to persuade them to move to these isolated villages.

CARE and its Tanzanian partners carry out the teacher training and supervise the school development. However, the involvement of local community members is regarded as crucial to the project's long-term success, whether as teachers and school administrators, or in the building and maintenance of the schools. "It's very important to encourage the local community to feel a sense of ownership of the schools. It's the best way to encourage people to maintain them once the project is completed. That is vital to the project's success," Baric says.

Local Ownership

Community members are already heavily involved in the construction and renovation of the schools, persuading pupils to enroll and stay in school. Much work has also been done in the local community to promote school sports, such as soccer. An emphasis is being placed on getting girls to participate, as they are traditionally excluded from sport activities. All these measures contribute to radical changes sweeping across pastoralist communities.

Scratching a living from nomadic herding is becoming ever more difficult, so many parents are keen to provide their children with an education that could open up different opportunities for them. And, of course, the very act of remaining in school is introducing children to more mainstream culture and making them more inclined to be sedentary. We could well be witnessing the end of a nomadic way of life that has been with us for thousands of years, but is now becoming almost impossible to sustain. **Ian Lewis**

Credit Suisse Goes Greenhouse Gas-Neutral on a Worldwide Basis

Credit Suisse has been an active campaigner for climate protection for more than 10 years now. The bank has been greenhouse gas-neutral in Switzerland since 2006, but following our Global Initiative “Credit Suisse Cares for Climate” – launched in 2007 – we are now greenhouse gas-neutral on a worldwide basis too.

Climate change is one of the greatest challenges confronting the world today. Based on past observations and future forecasts, scientists predict a rise in average temperatures around the globe. Heatwaves, melting glaciers and polar ice caps, not to mention droughts, are the likely consequence of this development – and indeed are already in evidence. As the increase in weather-induced natural events causes economic damage as well as ecological and social impacts, the world community is striving to develop measures that will counteract worldwide climate change.

The aim of the December 2009 climate change conference in Copenhagen was therefore to work together to draw up a follow-up treaty to the Kyoto Protocol, which expires in 2012. But the sobering outcome of the conference once again highlighted the complex challenges facing the world community – especially as major powers, emerging markets and small countries are at odds with each other regarding what needs to be done. It's not just governments but also companies that are called upon to

act urgently. Hans-Ulrich Doerig, Chairman of the Board of Directors of Credit Suisse, spoke of the role played by companies in the climate change debate: “In addition to our social responsibility, it is also in our economic interest to adopt measures against climate change instead of taking incalculable risks and possibly having to face damage on an immense scale later on. I am convinced that globally effective climate protection is also of major significance from a business point of view.” In the run-up to the climate change summit, Credit Suisse therefore campaigned for a binding, internationally coordinated framework that would help promote a climate-friendly approach among businesses. It also endorsed a letter from the WWF to the Swiss Federal Council, as well as participated in the ratification of Switzerland's amended CO₂ Act. What's more, in 2008 Credit Suisse CEO Brady W. Dougan along with other business leaders put his name to a set of climate change policy recommendations aimed at the heads of government of the G8 countries.

Global Initiative for Climate Protection

Credit Suisse became Switzerland's first major company to operate on a greenhouse gas-neutral basis in 2006. To achieve this goal worldwide too, the “Credit Suisse Cares for Climate” initiative was launched in 2007. It has been a success, with Credit Suisse now operating on a carbon-neutral basis worldwide since June 2010. “In view of the big challenges facing the global community, we intend to ensure that our commitment to safeguarding the climate is as effective as possible. So this initiative is all about measures to improve our own climate score card, as well as areas in which we can act as a catalyst in our capacity as global financial services provider. Whether in dealings with our employees, clients or business partners,

or in dialogue with the representatives of business, politics and other groups – we intend to exploit every available opportunity to make progress on climate protection,” says René Buholzer, head of Public Policy.

Improving the Climate Score Card

In order to reduce the greenhouse gas emissions caused by its operations – nearly 273,000 metric tons (301,000 short tons) for the group as a whole in 2009 – Credit Suisse has been tackling its two biggest sources of CO₂ emissions: the energy consumed by its buildings and business flights. This means systematically reducing energy consumption at all branches, and in the case of new and renovated buildings investing in energy-saving technologies, materials with high levels of insulation, as well as an energy-efficient IT infrastructure.

“As far as our Swiss real estate is concerned, we have developed our own special in-house software, first, to create transparency in relation to energy efficiency, and second, to identify the areas where optimization brings the greatest benefits. We're also working with our real estate service providers on binding standards for making our buildings more energy-efficient. By raising awareness and involving our external partners, we're also aiming to give greater momentum to climate protection beyond the business itself,” says Rolf Kruppenacher, head of Corporate Real Estate and Services Switzerland, of the various operating measures.

Aware of the importance of using energy sources that safeguard the climate, Credit Suisse is also systematically replacing fossil fuels with renewable sources such as hydroelectricity and wind power, as well as solar energy. Under new electricity contracts concluded for 2010, for example, the bank's 400 or so buildings in Switzerland will continue to

Tips for reducing CO₂:

1. Do not leave electronic equipment in standby mode.
2. Turn off lights every time you leave a room, and replace traditional light bulbs with the energy-saving type.
3. If at all possible, use public transportation or walk.
4. Offset business flights and switch to video conferencing wherever possible.
5. Consume electricity from renewable sources.
6. Make recycling second nature.



Small ponds and wet meadows can be found in the nature park surrounding the Uetlihof administration center in Zurich. Today, it's home to around 350 different species of plants, and has won numerous awards, including certification from the Swiss foundation Natur & Wirtschaft.

meet all its energy needs with certified hydroelectricity. Remaining emissions are being offset through high-value emission reduction certificates.

"Through all these measures, we've been able to raise energy efficiency worldwide, stabilize energy consumption at a low level, and even reduce the resulting overall emissions slightly since the start of 2007," says Krummenacher. Some challenges remain, however. "With a share of about a quarter of

all emissions, business flights still represent one of the biggest items on our climate score card. To eliminate as many flights as possible, we're therefore actively encouraging our employees to use the train for shorter journeys or opt for telephone and video conferences," Krummenacher explains.

Raising Employee Awareness

Another of the initiative's key aims is to anchor the commitment to climate protection

among Credit Suisse employees. Educational campaigns such as "Energy Efficiency Week" in Zurich raise employees' awareness about climate issues and motivate them to save energy both at home and at work. An interactive learning program containing a module on environmental and climate protection has also been developed. **Mandana Razavi**

→ Find out more on the subject at www.credit-suisse.com/citizenship/initiatives.

CREDIT SUISSE 

Credit Suisse is convinced that corporate responsibility toward the environment and society at large is a key factor for economic success.

Newly Graduated – and Unemployed

A graduate's first job should not be the unemployment office. "Jeunes@Work" is a Geneva-based project that aims to integrate young, well qualified but unemployed adults into the workforce by means of a solid concept. The initiative is now expanding into other cantons in French-speaking Switzerland.



Borjana Ristic's internship helped to land her a role in the "real" working world, too.

On the way to the staff restaurant of the Grand Théâtre de Genève, Borjana Ristic greets a stagehand here and an actress there. The 26-year-old intern feels at home at her place of work. Even her outfit – a black two-piece and blouse with classic frilly collar – suits the theater environment. "Here, everything takes on an artistic touch. Even the omelet from the staff restaurant is a work of art," says Ristic. She has worked as an

assistant in the communications department of Geneva's theater for five months: "My boss, who is very dynamic, has given me increasingly complex tasks with more and more responsibility. Recently, I handled the redesign of the Web site, edited and proofread the theater magazine Act-O, and I am currently looking for sponsors." But things didn't always look so rosy for this young woman. After completing her master's degree in inter-

national relations, she didn't know what to do next. "I chose this degree course out of pure idealism. I wanted to change the world, but I soon saw that this required a superwoman, and not a young woman without any work experience. My self-esteem plummeted." After a few fruitless job applications, she signed up at the unemployment office.

For Young Unemployed Graduates

Borjana Ristic is just one of many graduates, notably from non-technical degree programs, commercial apprenticeships or commercial colleges, to make such an experience. "Those who don't know what they want do not have a very good chance on the labor market. Going straight to the unemployment office after qualifying is not a good start to a career. Society and the economy also lose out on a lot of expertise," says Christine Théodoloz. She is the general manager of "Intégration pour tous" (IPT), a large charitable organization for the unemployed based in Vevey. Until two years ago, IPT worked exclusively with people who had suffered health or psychological problems to help them rejoin the work force. Christine Théodoloz: "That was when Patrick Odier, a private banker from Geneva, approached us with the project 'Jeunes@Work.' We found his concept of integrating these highly qualified young people as quickly as possible into the labor market by means of an internship to be a good idea. There was no suitable point of contact for these people." The project was launched in Geneva in 2008.

A Vague Idea Becomes a Real Job

Borjana Ristic's successors sit in the rooms of an office building in Petit-Lancy, a district of Geneva. In one room, six men are listening to their teacher. After bringing their professional aspirations into line with their skills and current job vacancies in the first week, they are now preparing – first theoretically and later in an interview training session – for the job interview. In the adjacent room, the

“Atelier emploi” (job exchange), three women and one man are looking through their applications. 22-year-old Edjenja has just graduated from commercial college and is applying for an internship as a bookkeeper. She praises the fact that here she finally learned how to draw up a professional résumé. Next to her is Igor (27), a Swiss with Russian-American roots. He studied business and was unable to find a job, despite his foreign language skills. Close to despair but nevertheless too proud to go to the unemployment office, he finally heard of “Jeunes@Work” at the university. Igor is now pleased to report that thanks to the organization’s contacts in industry, he has found a 13-month paid internship at Caterpillar with the prospect of a permanent position.

An Impressive Success Story

The combination of advice, training and a referred internship is a success. In many cases, the internship leads to a permanent position in the same company or increases the person’s chances of finding a job after gaining some initial experience. Last year, “Jeunes@Work” helped 70 percent of 137 young adults not only to find an internship, but also to find a permanent job. The 200 or so companies that have worked with the organization so far are also enthusiastic. They have the chance to try out highly qualified employees as interns and introduce them to the company before hiring them permanently.

Credit Suisse is now providing financial support for the project. The plan is to extend “Jeunes@Work” to other cantons in French-speaking Switzerland. The next branches will be opened in October in the cantons of Neuchâtel and Jura, and in the Bernese Jura. The project will then be expanded into



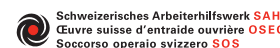
1 “Jeunes@Work” in Geneva – a class of highly motivated students. 2 A discussion with Igor (27), Daniel (21), Daliborka (21), Edjena (22), Emerson (32) and teacher Jean-Pierre Mathys during the break. 3 Christine Théodoloz, General Manager of Intégration pour tous (IPT) in Vevey.

the cantons of Vaud and Valais during the course of 2011.

For Borjana Ristic, the five-month internship will soon be over. Is she a little sad to be coming to the end of her first ideal job? “Thanks to this internship I now know what I want and what I can do – and I also have two applications outstanding. The chances of finding a permanent job are very good.” She goes on to say: “And by the way, I haven’t lost any of my idealism.” **Bernard van Dierendonk**

→ More information is available at www.credit-suisse.com/citizenship.

→ More information about “Jeunes@Work” is available at www.jeunesatwork.ch.



Initiative: “Together We Can Beat Youth Unemployment”

Credit Suisse is committed to improving professional opportunities for young people as part of its long-term efforts to promote Switzerland as a center for education and jobs. Through its initiative “Together We Can Beat Youth Unemployment,” the bank will provide 30 million Swiss francs to projects that tackle youth unemployment. Over the next three to five years, it will work with seven specialized partners. To learn more, go to www.credit-suisse.com/citizenship.

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As globalization makes itself increasingly felt, US parents are eager to provide their children with a competitive edge, notably by immersing them in foreign languages and cultures.

Babel No More

It's a small world after all ... Globalization is now a household word, and not just for mom and dad. The implications of a new multipolar world are trickling down to children and young adults.



Text: Robert Weissenstein, Chief Investment Officer, Private Banking Americas, and Jessie Zhu, Investment Strategy & Advisory Group, Private Banking Americas

Children in the US and many other countries are exposed to multiculturalism at younger ages than ever, through traditional education as well as daily doses of the Internet. They use technology (laptops, cell phones) the same way their parents used pens and paper. With unprecedented access to information, they are more aware of global issues like resource shortages, clean energy and global warming. The emergence of China is not much of an issue for them, the importance of China is – they do not know a world without China on center stage. They navigate effortlessly through the Web consuming information that may have been buried inside an unread newspaper or establishing social contacts with people they would not have otherwise met in places they have never been.

Multicultural kids are expected to make up 46 percent of the US population of 3- to 11-year-olds in 2015. Parents are eager to provide their children with a competitive edge by immersing them in foreign languages and cultures. Europe and Asia lead the US in language education partly because they

begin language education earlier (elementary school instead of high school) and require intensive study longer. This can become an issue as multilingual talent is increasingly needed to compete.

Learning Chinese on the Rise

Spanish is the choice of 80 percent of those who study a foreign language in grade and high schools. Chinese is rapidly gaining popularity, a reflection of how schools and parents increasingly see China's rise as an economic power for which they should prepare their children. In 2000, there were about 5,000 7th–12th grade students enrolled in Chinese classes out of 7 million learning foreign languages. Now there are 66,000 students studying Chinese. Nationwide, programs to teach Chinese in kindergarten through grade 12 more than tripled since 2004.

Among America's 27,500 middle and high schools offering at least one foreign language, the proportion offering Chinese rose to 4 percent from 1 percent between 1997 and 2008 (see figure 1). The number >

of students taking the Advanced Placement (AP) test in Chinese, introduced in 2007, has grown so fast that it is likely to pass German this year as the third most-tested AP language, after Spanish and French.

The private Brearley School in New York started teaching Chinese to all 50 first-graders in 2008, on top of existing instruction for grades 5 to 12. The Yu Ying Public Charter School in Washington offers classes to students in prekindergarten through second grade in Chinese and English on alternate days. Yinghua Academy, a charter public school in the Midwest, teaches subjects ranging from math to American history in Mandarin. Yinghua's student body, once 70 percent Asian, is now 50 percent white, black or Hispanic. These schools represent the leading edge of the Chinese language study movement in the US at a grassroots level.

English Elsewhere

Other countries are intensifying their English curriculum. In South Korea, teaching focuses primarily on grammar and reading; many students cannot converse in English even after 10 years of study. To compensate, South Koreans spend 16 billion US dollars on English learning annually; they spend 5 billion dollars educating their children abroad (equating to 20 percent of total government spending on all education).

It is not uncommon for Korean children to study in English-speaking countries with their mothers, while their fathers stay home – the so-called “wild geese” phenomenon. There are an estimated 200,000 “goose daddies” nationwide. In 2008, the government announced a 4.2-billion-dollar redesign of its public English education program. Paradoxically, parents plan to spend even more on private tutoring for fear their children might lag behind in the new system.

More than 300 million Chinese are currently studying English; a vast national hunger has exalted it beyond just a language. It is a defining measure of upward mobility potential. Well-off parents of preschool and kindergarten children in large cities use special schools staffed by Americans, Canadians and Filipinos. The largest English school system, New Oriental Education, generated 370 million dollar in revenue in 2009.

Outward Bound

In the quest to acquire global skills, US university students are studying abroad in record numbers. In 2008, 262,000 students

studied abroad, up 50 percent from five years prior and double from a decade before (see figure 2). That still only accounted for less than 2 percent of the college population, indicating much room for growth.

Britain has long been the top destination for Americans studying abroad, followed by Italy, Spain and France. Of the top 20, 11 countries are outside of Europe. China, Argentina and India have been moving up, ranking 5th, 12th and 17th and growing over the previous year with a growth rate of 19 percent, 14 percent and 20 percent respectively. South Africa has also been growing as study abroad center, posting a 15-percent growth over the previous year. Students are increasingly going to non-English-speaking, nontraditional destinations including emerging countries (see figure 3). Some are combining internships to add professional experience to their linguistic and cultural immersion, giving them further edge in a competitive global job market.

Challenge for Our Children

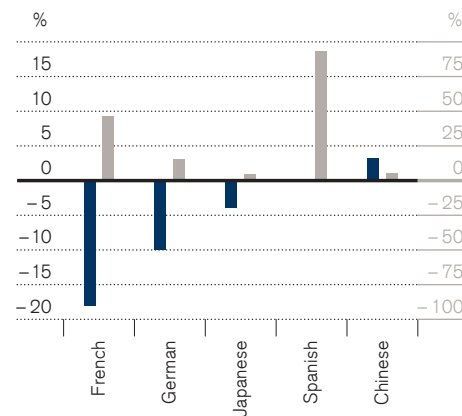
Upward aspirants are taking a vivid interest in the world beyond their own borders, embedding global components into their basic educational process. Perhaps driven by economic self-interest, it benefits their national interest as well. It will become increasingly impossible to prosper with an insular approach.

The Internet is the cyber equivalent of taking down the Berlin Wall 20 years ago, opening the flow of traffic and information between previously segregated cultures and regions. Investment in education is investment in the infrastructure that will support our children and young adults in a truly globalized world. Getting this right means starting this early. <

1 Demand for Chinese Classes Is Rapidly Rising

Spanish classes are offered in almost all US schools, while the demand for Chinese courses is rising. Some 4 percent of US schools offered Chinese classes in 2008. Meanwhile, the number of US schools offering French, German and Japanese classes is declining.

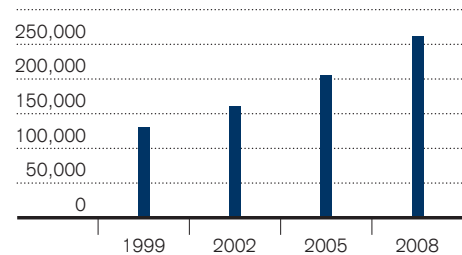
Source: The New York Times, Center for Applied Linguistics



Percentage change from 1997
Foreign languages offered by schools in 2008

2 Number of US Students Studying Abroad

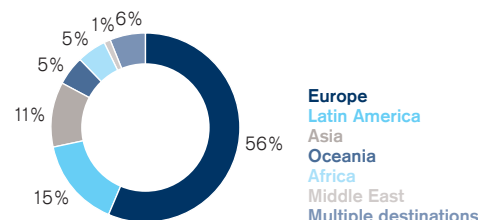
The number of US students studying abroad is increasing fast, doubling to 260,000 in just a decade. Source: Institute of International Education



3 Study Abroad Destinations for US Students During 2008

The UK remains the favorite destination for US students studying abroad, closely followed by Italy, Spain and France. Outside Europe, China, Australia and Mexico are the current top destinations.

Source: Institute of International Education



The Long Shadows of Collateral Money, Asset Bubbles and Inflation

Many analysts would not dare to predict inflation. We think that a closer look at shadow money can shed some light on its outlook. Looking closely at certain debt securities, which sometimes can act like money, turns out to be a valuable way to gauge inflationary pressure, at least compared to conventional measures of the money stock.



Text: James Sweeney, Global Fixed Income

Inflation? Deflation? What is it going to be? Some argue that a huge legacy of excess debt and already massive global spare capacity make destructive deflation inevitable. Others feel that extreme policy stimulus – and in particular the huge jump in the size of central bank balance sheets – will inevitably fuel much higher inflation sooner or later. Still others stress the idea that a secular break in the social, political and economic consensus might one day let inflation ride again. And never far below the surface is the notion that excessive debt burdens (public and private) will ultimately have to be inflated away.

In early 2009, investors' expectations seemed to be remarkably unanchored. To put it bluntly, they were all over the shop, ranging from extreme deflation to hyperinflation, and every shade of grey in between. But, for the majority of them, it is simply that they do not have much confidence in their ability to predict inflation after recent events. This is why Credit Suisse wants to stress the importance of the shadow banking system and what might be called the shadow money stock. Credit Suisse believes that shadow

money can mean that conventional measures of the money stock are a (very) poor gauge of inflationary or deflationary pressure.

What Is Shadow Money?

The intuition behind shadow money is simple. A bond that is money-like collateral, meaning it has a low repo-market haircut, is shadow money because holding that bond feels like holding cash (see box for explanation of repo haircuts on p. 56). An investor who owns shadow money can run lower deposit balances than otherwise, because he can borrow against his assets at will. So shadow money is the amount of immediate cash embodied in various debt securities. Private shadow money, which includes all types of asset-backed securities, mortgage bonds and corporate bonds, was 9.5 trillion US dollars in early 2007.

A collapse in issuance, a huge increase in repo haircuts (reducing "moneyness") and a sharp reduction in asset values caused private shadow money to contract by 38 percent to 5.9 trillion dollar in early 2009. Since then, however, private shadow money has recov-

ered and is now above 8.5 trillion dollar again. Meanwhile, the shadow money in publicly backed debt such as treasuries and agency bonds has been steadily increasing. Since early 2007 it has risen from 11.3 trillion dollar to over 16 trillion dollar, driven especially by big increases in treasury issuance. Treasury haircuts have been stable through the recession, but haircuts on most other asset classes have recovered substantially from their crisis levels in early 2009.

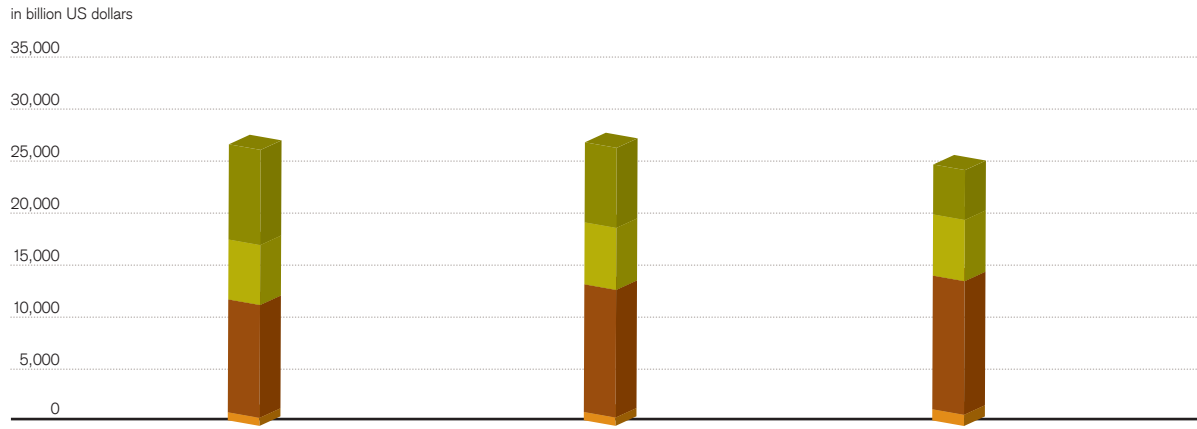
Base, Bank and Shadow Money

The basic account of money supply starts with the monetary aggregates that by tradition matter most for consumer price index (CPI) inflation: in the US case, cash balances in aggregates, such as M2 (a figure roughly equaling total deposits) or MZM (zero maturity money or cash plus bank claims and money market funds realizable as immediate cash). The available stock of money is determined by how much the central bank has printed (outside money) and how much the banking system has created by making loans (inside money). The inside money stock is >

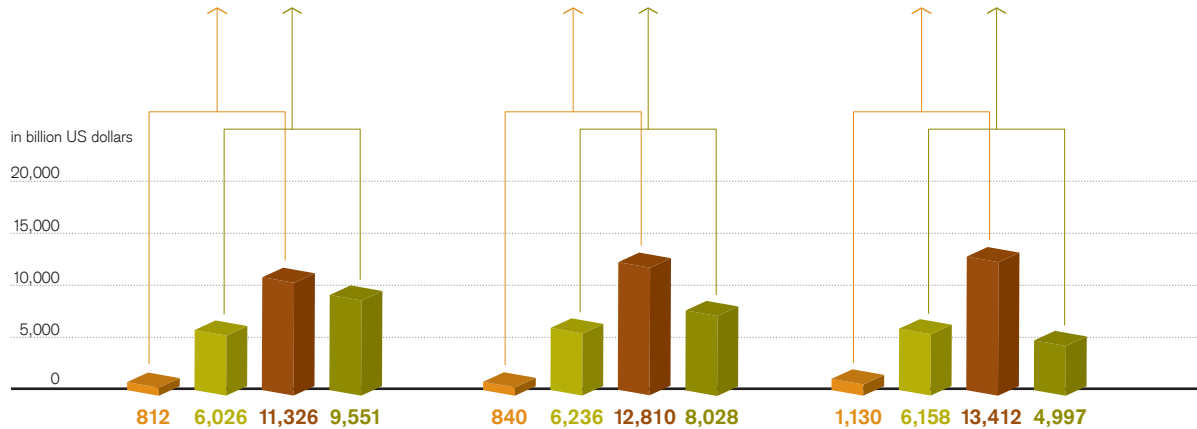
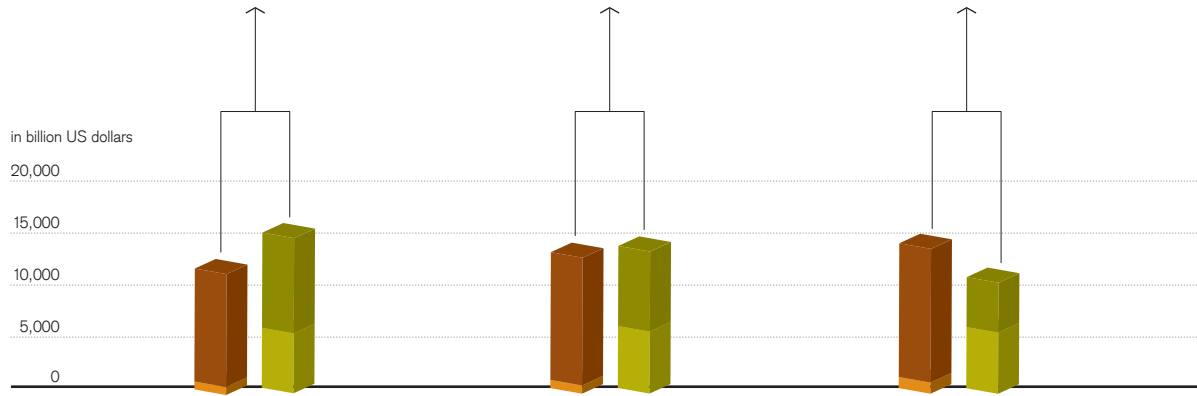
1 The Numerous Components of Money Supply

The money supply at hand in our financial system can be broken down into numerous components. The tables below illustrate these components and how they have developed since early 2007. Source: Credit Suisse

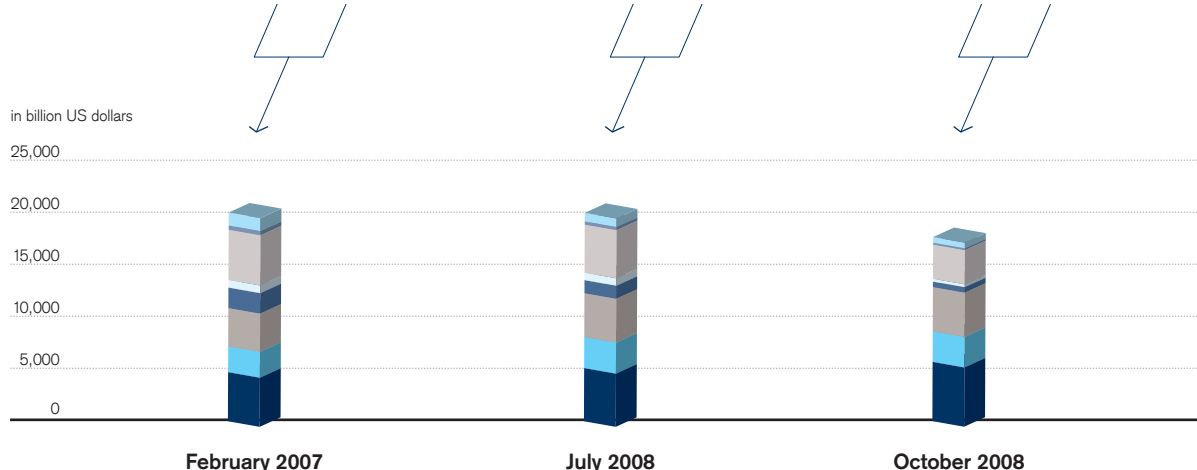
Total US Effective Money
Size of the total US effective money stock is estimated as the sum of deposit money in addition to shadow money.

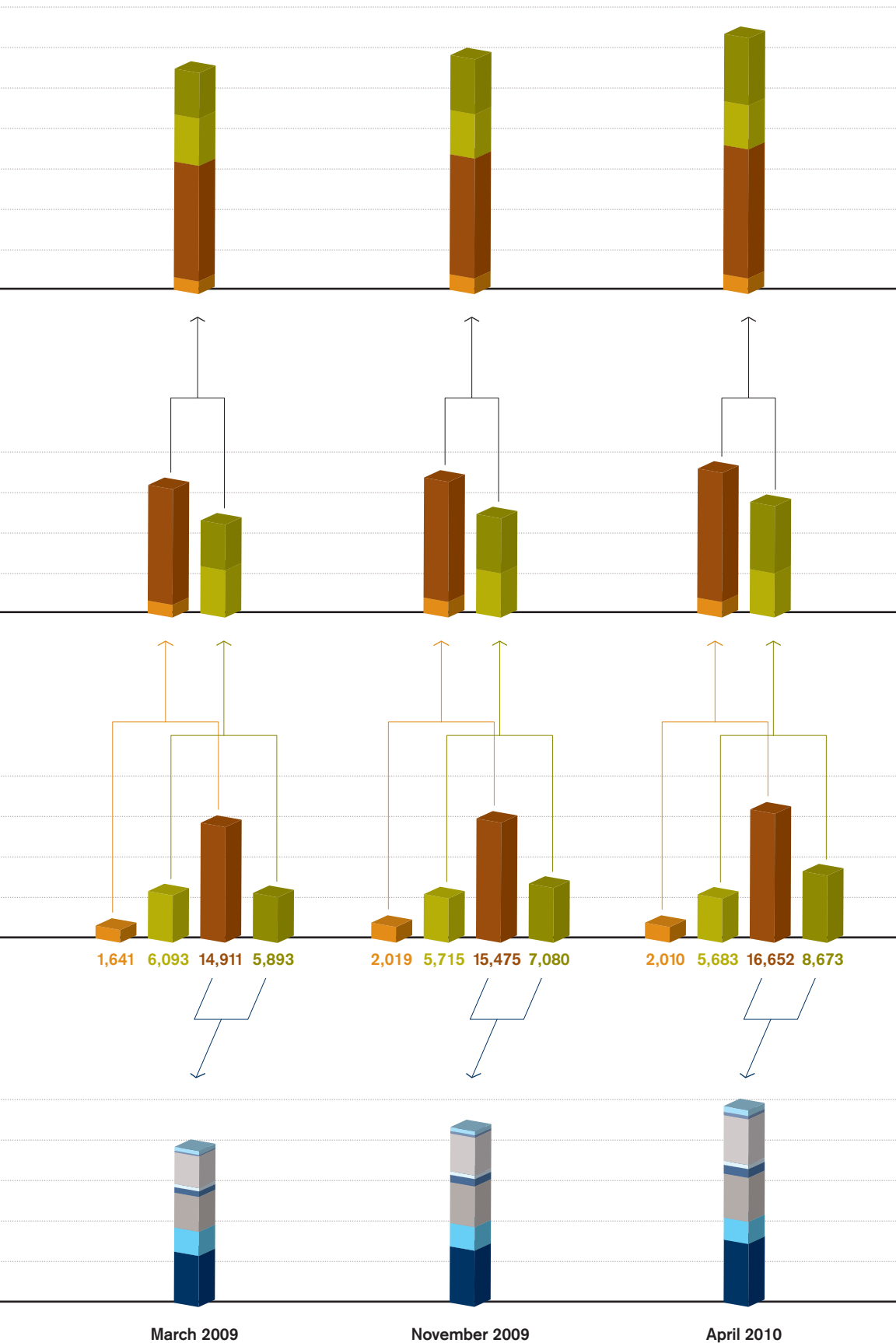


US Shadow Money Stock: Public Versus Private
Shadow money embodied in private debt securities has fallen sharply since 2007, while shadow money in publicly backed debt such as treasuries and agency bonds has risen.



Components of US Shadow Money
The composition of US shadow money has not significantly changed since early 2007.





Money Supply

M2 Figure roughly equaling total deposits

MZM Money with zero maturity. Measures the supply of financial assets redeemable at par on demand.

Outside Money Money the central bank has printed. The money either of a fiat nature (unbacked) or backed by some asset that is not in zero net supply within the private sector of the economy. Thus, outside money is a net asset for the private sector.

Inside Money Money the banking system has created by making loans. Since it is one private agent's liability and at the same time some other agent's asset, inside money is in zero net supply within the private sector.

Public Effective Money

- Outside Money
- Public Shadow Money

Private Effective Money

- Inside Money
- Private Shadow Money

- ABS
- High-Yield Corporates
- IG Corporates
- CMBS
- Non-Agency Mortgages
- Agency Mortgages
- Agencies
- Treasuries

much bigger than outside money because of the deposit multiplier.

Money demand, meanwhile, is the desired cash balances held by the public. Money demand rises as the economy grows, via transactions demand, and falls as interest rates rise, because zero-yielding cash becomes less attractive. This standard approach to money supply and demand captures some of the essentials but does not go far enough. The Austrian-born economist Friedrich Hayek's point is that the economy can create its own media of exchange in order to economize on the use of inside and outside money when there is significant demand for some type of money for use in purchasing assets. Of course, when assets can themselves serve as collateral, allowing for leveraged purchases, then they take on money-like properties. And when financial assets serve as collateral for borrowing to purchase yet more financial assets (buying on margin) this form of shadow money can become particularly potent in driving asset price overshoots and bubbles.

Shadow Money Can Cause Bubbles

A stylized version of a credit bubble such as the one featured in **figure 2**, where shadow money becomes important, can roughly be summed up as follows. It starts with some genuine investment opportunity almost always related to a real improvement in technology or fundamentals. As strong price performance turns into a boom, optimistic investors desire to buy more on margin. They leverage up, usually using the buoyant asset itself as collateral. Lenders are all too willing to benefit by funding these purchases – after all, in the worst case, they will be holding valuable collateral. Borrowing terms get easier. New money flows in and associated financial assets begin to take on money-like attributes.

As buying on leverage accelerates, prices and credit conditions blow past what is warranted by fundamentals. There is a monetary

expansion in the broad sense of shadow money, but when the bust comes this is quickly reversed. Lending conditions tighten, collateral prices plummet and highly leveraged optimists are wiped out. Now cash is king; investors do not want houses, stocks or asset-backed commercial paper. To accommodate this demand for cash the government or central bank must quickly and forcefully expand the monetary base or else the increase in money demand can lead to a painful general deflation.

Meanwhile, the sudden disappearance of good collateral in the financial system has created a dangerous deleveraging that could feed on itself. The government may respond by increasing its own debt, since public collateral in the forms of treasury bills and such do still have funding liquidity, and by flooding the market with government paper the leverage collapse can be better managed. In the example in **figure 2**, effective money (meaning shadow money plus the conventional money stock) falls sharply, but it would have fallen much more without aggressive policy actions. **Figure 3** shows effective money as a set of concentric circles, with the monetary base at the center and high-funding liquidity assets posing as shadow money at the edges. The blue part is the conventional money supply; during a boom broad money moves out further on the diagram. And, during a bust, the circle tightens.

The Current Situation

The process just described fits the current cycle, but the idea has a more general application and has reappeared many times in economic history. In a variety of instances, the bursting of large credit bubbles has led to deflation, even when the government balance sheet has expanded aggressively.

When LIBOR rates soared above the central bank's policy rates in August 2007, central banks gradually moved to a policy of first sharply lowering interest rates and then significant new cash creation by crediting the

reserves balances of banks. In the US, these new reserves were in fact "idle reserves" because they were not associated with new loan growth. In fact, the risk was that bank balance sheets would actually contract as old loans matured and banks were reluctant to make new ones. As a result, loan creation was limited, but outside money, or the monetary base, soared. Many market observers erroneously equate outside money with the money stock itself, and proclaim the Fed's actions inflationary.

In Credit Suisse's view, this is not the case: The money stock has been mildly contracting since early 2009. Banks' continued risk aversion means inside money contraction, and not outside money expansion, is the threat. Both a recovery in loan creation and a willful allowance of rising inflation by policy makers are needed for there to be an inflation problem coming from money supply. Money demand is not merely a function of interest rates and growth. What also matters is "liquidity preference," or the desire by the public to hold large cash balances as buffers during times when they fear bad economic outcomes. But a huge increase in the demand for cash at a time of weak growth is a rare, dangerous and potentially deflationary occurrence, and exactly what tends to happen in financial crises such as the recent one.

But is the recent big increase in money demand so mysterious? Credit Suisse argues that funding liquidity or the ability of owners of assets to borrow money quickly against those assets, forms yet another portion of money demand, independent from growth and even interest rates. Obviously, households whose home equity line of credits (HELOCs) have been cut or whose home equity has diminished; firms whose commercial property has collapsed in value; and banks whose ability to borrow in collateral markets has taken a hit – all face a similar situation. Because their perceived availability to raise cash has fallen, their actual cash holdings must rise. This is not temporary hoarding but permanent rebalancing. Their money demand goes up, and as a consequence the velocity of money must fall. Clearly, the growth of the shadow banking sector and especially the mortgage market in the past decade made private collateral more central to credit creation than ever before. Repo lending became the critical swing variable in shadow banks' balance sheets; home equity extraction became the key means to smooth consumer spending during income shocks; and off-

Repo Haircuts

A repo transaction is an agreement for a collateralized short-term loan with a commitment by the seller to buy the security back from the purchaser at a specified price at a designated future date. The haircut is the margin in the repo transaction: the difference between the amount of the loan and the market value of the collateral used in the transaction, e.g. a treasury security, a money market instrument, a federal agency security or a mortgage-backed security.

balance sheet funding of various assets became a major earnings generator for commercial banks.

Inflation in Sight?

The traditional monetarist view that the recent expansion in the monetary base (and budget deficit) must lead eventually to inflation ignores the dynamic relationship between money demand and the funding liquidity of assets in an economy where collateral is central. However, government interventions have now offset the reduction in effective money (see figure 1). Credit Suisse estimates that total effective money has risen since early 2009 and is now well above its levels from 2007. However, there is now much more public shadow money and less private shadow money; and more monetary base without an expansion in banks' loans-to-deposits ratios.

The increase in government liabilities has probably prevented large-scale deflation, but so far remains miles short of creating enough "safe" money to generate inflation. Critically, government collateral still has funding liquidity, and this should allow the economy to deleverage more slowly than otherwise. A faster deleveraging would have increased money demand further and led to higher risks of severe deflation.

Recovery now rests on a stabilization of collateral values and a return of funding liquidity. This has occurred since early 2009. An increased willingness to lend on collateral – and reduced haircuts in financial markets – are a clear sign of stabilization; and perhaps a signal that government stimulus can start to be withdrawn. Credit Suisse believes global growth momentum has recovered strongly – a typical inventory cycle phenomenon – and that it has now fed through into consumer and business confidence. Secondly, as financial confidence and funding liquidity continues to improve, the possibility – indeed the probability – exists that a self-reinforcing cycle of expanding private collateral money is taking hold.

This could be surprisingly powerful as expectations for total credit market losses, the amount of new capital needed by banks, the cost to taxpayers of insuring the credit system and the risk appetite of both hedge fund and real money investors all start to improve together, adding to the rebound in consumer and business confidence. Provided this process is not suddenly disrupted by a new and fundamental shock to confidence

and final demand (bad regulation, protectionism etc.), the process could lead to a sturdy recovery in credit and equity values, and certainly one that would surprise most observers. And that in turn would lead to a more sustainable rebound in output/demand than most people expect.

Even then, we are still a long way from generalized inflation for two reasons: first, because the global output gap will still be very large and, second, because we expect firms to react to the current crisis by seeking radical new ways to reduce overheads and improve efficiency. So productivity is set to improve sharply in our view into any rebound, which suggests that unemployment will stop rising but will not fall back to anywhere near the levels seen at the peak of the last boom. Thus, Credit Suisse believes even a major extension of the rebound in growth and confidence will not be enough to stop core "deflation." It should, by contrast, be enough to drive up the prices of those industrial or food commodities in structurally short supply, including oil and some of the industrial metals. So, if a sustainable rebound in output takes place, the result will probably be higher prices for energy and some food commodities and metals, but significantly lower prices for many other goods and services.

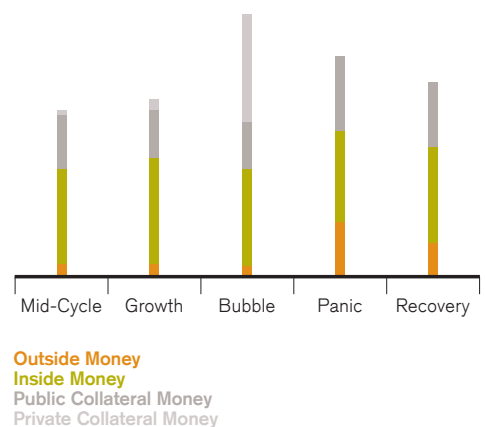
It is worth asking whether policy makers are aware of the kind of arguments about the shadow banking and money system set out in this article. Of course they are in general terms. This whole perspective about money substitutes and the importance of collateral is not new. Credit Suisse's emphasis on the external nature of secondary money and credit creation may be unfamiliar, and the estimates of the level of the shadow money stock may be novel, but the basic intuition about what is going on is widely shared by now. Moreover, this framework has some interesting implications for the prevention of future crises and the form of reregulation, namely, that central banks interested in a less procyclical system should monitor haircuts on private collateral as one sign of excessive financial exuberance/risk appetite, and perhaps even regulate these haircuts as a supplement to or substitute for anticyclical capital requirements (macroprudential policy).

For now, however, the immediate focus belongs on whether confidence can progressively return: confidence in collateral, in lending, in economic risk taking. Once the immediate deflation shock wears off, we can consider the possibility of a return to an

economy with strong enough aggregate demand to deliver inflation. And whether it will probably depends not on what the government is doing now, but on what the private sector will be doing then. It will depend on whether we return to an economy confident enough to lend again on good terms and reasonable collateral. True recovery lies not just in higher prices, but also in lower haircuts and easier lending terms. In other words, the answer lies in the shadows. <

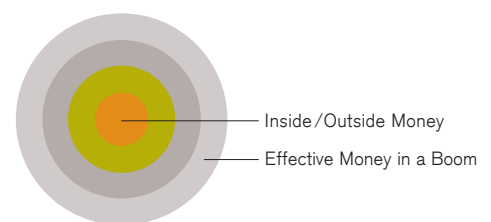
2 Stylized Map of a Credit Boom And Bust With Shadow Money

Effective money (meaning shadow money plus the conventional money stock) falls sharply, but it would have fallen much more without aggressive policy actions. Source: Credit Suisse



3 Map of Effective Money

Size of the total US effective money stock is estimated as the sum of deposit money in addition to shadow money (in billion US dollars). Source: Credit Suisse



Outside Money: The Monetary Base
 Inside Money: Bank Deposits
 Broad Inside Money: Money Market Funds
 High Funding Liquidity Assets

Financial Inclusion Soon Likely for Billions

Right now, a majority of the adults in the developing world do not have a bank account. The adoption of new technologies, increased urbanization and wealth developments will enable billions of people to access financial services in the years to come. The emergence of a strong middle class will also radically change the emerging banking world.

Text: Dorothee Enskog, senior editor at bulletin



Mobile phones have the potential to turn billions of unbanked people into first-time bank clients. The Kenyan mobile payment service M-PESA has attracted 9 million clients in less than five years.

It is widely accepted that access to financial services, whether it is in the form of savings, credit, money transfers or insurance, is fundamental to improving the well-being and productive capacity of the world's poor. Over the past couple of years, there have been growing international attention and efforts related to the issue of financial inclusion. The United Nations, for example, designated 2005 as the International Year of Microcredit, adopting the goal of building inclusive financial systems. The World Savings Banks Institute (WSBI) – the global representative of savings and retail banking – followed suit in 2009, when it launched a programme aimed at doubling the number of affordable and accessible deposit accounts held by poor people in the developing world within the next five years.

According to World Bank estimates, there are currently about 6.2 billion deposit accounts worldwide, a figure exceeding the number of adults living on our planet. But these accounts are unevenly distributed. Nearly 2.7 billion people or 72 percent of the adult population in developing countries are unbanked. Why does such a large number of the global adult population still have no bank account? One major barrier to financial access remains geography, the physical distance to a financial institution. Banks often require clients to visit a branch or use an automated teller machine (ATM) to access their services. While Spain has 96 branches per 100,000 people, Ethiopia for example has less than one branch per 100,000 people. The adoption of new technologies, such as mobile banking, and increased urbanization both have the potential to alleviate this physical constraint.

Mobile Banking in Demand

The penetration of mobile telephony has grown at a tremendous rate over the past decade. In 1999, only 8 percent of the world population had a cell phone subscription, with low-income countries having very few users. A decade later, the trade association representing the interests of the global mobile communications industry, GSMA, reported more than 4 billion cell phone subscriptions worldwide. Today, around 80 percent of the new connections are made in emerging markets and mostly by their lower income groups.

More than 80 percent of the world's population now lives in an area with cell phone coverage. It is therefore plausible that a large proportion of the people who currently

have no access to financial services will have access to electronic payment instruments in the coming years. (See figure 1)

Mobile banking has emerged as a promising new approach to turn billions of unbanked people into first-time bank clients. An example of a successful launch of cell phone banking is the mobile payment service M-PESA offered by Safaricom in Kenya. Since it began offering its services in 2007, M-PESA has attracted nearly 9 million clients, corresponding to 40 percent of the country's adult population. Nearly a third of M-PESA's users were previously unbanked. The proportion of Kenyans now considered to be financially included has almost doubled to 41 percent in the past three years, largely (but not exclusively) thanks to this mobile payment scheme, according to FSD Kenya, an independent trust supporting financial inclusion.

Mobile banking is still in its infancy and at the moment mainly used for payment services. In the current phase, mobile banking generally supports a faster development of rural emerging markets, underpinning overall economic growth for the region. Yet, it is not a very profitable banking segment per se, but it might give banks access to a new client base likely to become wealthier in the longer term.

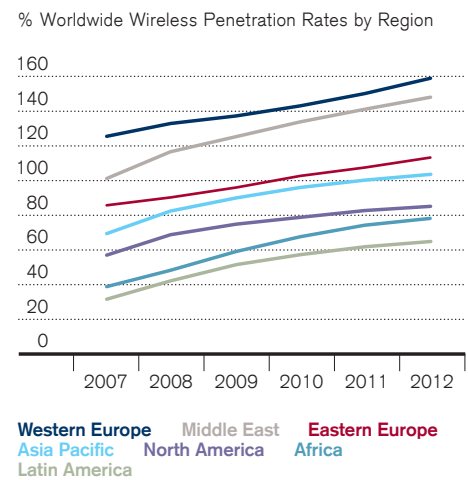
Increased urbanization is another factor that will drive the demand for banking services in the emerging markets. The United Nation's Population Division expects that 51 percent of the population in the developing world will live in cities by 2020, compared with 45 percent now. Not only do the new city dwellers have a much easier physical access to banks; they are also looking for enhanced banking services, notably improved ways to transfer money from the city, back to their families left in the countryside.

Emerging Middle Class

High prices and fees today currently represent additional barriers to financial inclusion. The opening of a bank account is out of reach for a large number of unbanked people, as banks often have minimum deposit requirements and high fees. It is not unusual for banks to require a person opening an account to make a minimum deposit equivalent to half of that country's per capita gross domestic product (GDP). A World Bank report points out that more than 700 US dollars are necessary to open an account in Cameroon. This sum actually exceeds the country's per capita GDP. >

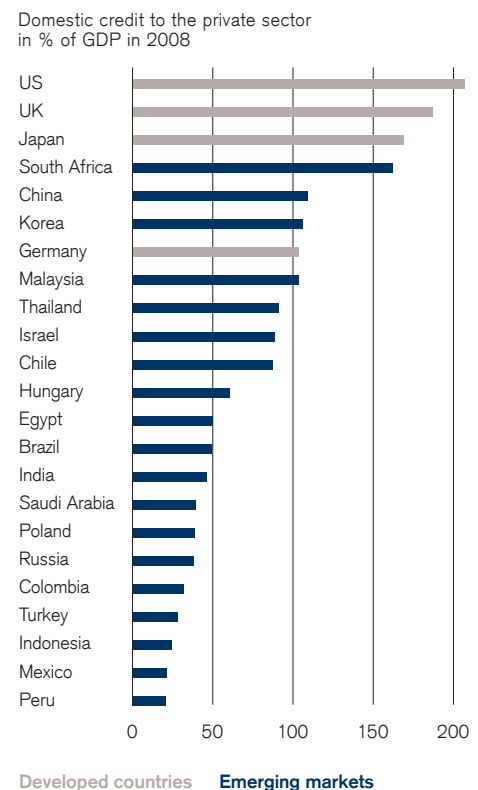
1 Worldwide Market Penetration Of Mobile Phones

The penetration of mobile phones has grown at a tremendous rate over the past decade and further growth is forecast. Source: SG Cowen



2 Underpenetrated Banking Markets

Emerging banking markets remain largely underpenetrated, with the domestic credit volume to the private sector as percentage of GDP well below 100 percent, with the notable exceptions of China and South Africa. Source: World Bank, Credit Suisse



But as the population of the emerging markets becomes wealthier in the coming decades, a strong middle class will emerge. The World Bank forecasts that the middle class in emerging markets, defined as people with annual incomes up to 30,000 US dollars, will triple from 400 million today to 1.2 billion people by 2030. (See figure 3) This tremendous increase roughly corresponds to four times the US population, or double the European population.

The emergence of what can be considered a new “middle class” will in turn boost the demand for all types of goods and services. These additional 800 million people, who are forecast to swell the ranks of the middle class, will require access to banking services, ranging from bank accounts, credit cards, payment cards, consumer loans to mortgages. Over time, they will also start to accumulate wealth and are likely to be interested in investing their money. Demands for safe-keeping accounts should therefore grow fast, once the amount of deposits allow for investing. These developments trigger opportunities for (very) profitable banking in the emerging markets over the next 20 years.

Underpenetrated Banking Markets

Most of these emerging banking markets are still underpenetrated. (See figure 2) This situation is forecast to change in the medium term, as strong growth in the emerging banking sector has started to become apparent in markets as diverse as China and India. The

banking sectors of the seven largest emerging economies – Brazil, Russia, India, China, Mexico, Indonesia and Turkey – are expected to grow significantly faster than their GDP as they develop. It is not only the local domestic banks that are likely to benefit from this growth. New entrants should also be able to reap a part of the emerging banking market, particularly if they are allowed to fully access the local banking markets.

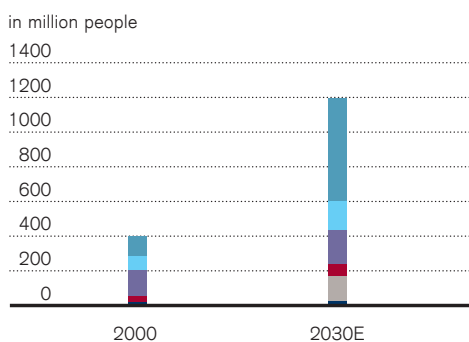
The regional situation is, at the moment, very diverse. In Latin America, market access for foreign banks is widely granted and growing. In Mexico for example, foreign financial institutions – mostly Spanish banks – control two-thirds of the banking market. In Brazil, the Spanish lender Banco Santander has a decent market share, but local banks such as Itaú Unibanco and Banco Bradesco are also strong players. In Eastern Europe, approximately two-thirds of the banks are controlled by Western European banks. Société Générale, KBC, Commerzbank, UniCredit and Intesa Sanpaolo are among the larger players in the region. In Asia, the situation is somewhat different. Foreign banks still face high entry barriers in the form of license limitations in countries such as India and China.

Domestic banks as well as those with an existing foothold in the Asian markets are the ones forecast to benefit the most from the increasing demand for financial services. PricewaterhouseCoopers forecasts that India will emerge as the third-largest domestic banking market in the world by 2040, growing at a faster pace than China in the long term. Brazil, Indonesia, Mexico, Russia and Turkey all have the potential to develop banking sectors of comparable scale to major European economies by 2050.

In short, the emerging banking space will radically change in the years to come, as competition for these markets intensifies. Billions of people who are currently unbanked will be financially included, and the millions of people expected to join the emerging middle class will require more sophisticated financial services to serve their daily (financial) needs. The European and North American banks will not want to miss these golden opportunities in the emerging markets. (See figure 4). <

3 Number of Affluent Clients Likely To Triple

The number of affluent clients in emerging markets is likely to triple to 1.2 billion people by 2030. Source: World Bank



Africa Middle East Europe and Central Asia
South Asia Latin America East Asia

4 A Selection of Large Emerging Market Banks

The financial sector is thriving in the emerging markets, and the market value of local banks beats some well-established Western banks. HSBC’s, Citigroup’s and Banco Santander’s market capitalization stood at 167 billion, 110 billion and 89 billion dollars respectively on June 25, 2010. Source: Bloomberg

Market capitalization in billion US dollars

- 220**
Industrial and Commercial Bank of China
- 199**
China Construction Bank
- 132**
Bank of China
- 79**
Itaú Unibanco (Brazil)
- 56**
Sberbank (Russia)
- 53**
Bank of Communications (China)
- 52**
Banco Bradesco (Brazil)
- 44**
China Merchants Bank
- 39**
Banco do Brasil
- 32**
State Bank of India
- 30**
China CITIC Bank

Good to Know

Definitions and Book Reviews From the Business World

Fair Trade Movement [commitment to greater justice in global trade]: What is the most effective form of development assistance? It's a question that has been dividing economists, politicians and non-governmental organizations (NGOs) for years. One possible answer is "trade not aid," i.e. that the battle against poverty is best fought not through charitable initiatives, but by targeted measures to liberalize global markets. The → **fair trade movement**, which sprung up in the 1960s as a response to the inherent injustices in international trading practices and policies, pursues the objective of providing everyone with market access. Within the framework of the overall movement, a process of commercial and communication exchange takes place between producers, consumers, trade organizations and NGOs. As a result, opportunities are created for economically disadvantaged producers, so that producer capacity and expertise is promoted, and global working and living conditions are improved. The experience has shown that fair trading relationships on the one hand, and socially and environmentally acceptable conditions on the other, can contribute to a global trading system in which opportunity is open to all.

Economic Cycle [entirety of fluctuations in economic activity]: Up and down, peak and trough: Economic activity is a bit like a roller coaster ride in that it follows a particular course. In intervals that are more or less regular, an economy undergoes phases of upturn and phases of downturn. Viewed together, these fluctuations in key economic measures such as production, employment, prices and interest rates are known as the → **economic cycle**. Accordingly, an economy undergoes cyclical movements in which recurring trends manifest themselves and can be used to describe the prevailing economic situation. The length of individual cycles will vary depending on their nature: Seasonal fluctuations are typically weather-related, medium-term fluctuations result from differences in aggregate

supply and demand, while longer-term fluctuations are in turn triggered by far-reaching changes that impact on an economy, such as innovations.

Branchless Banking In the developing and emerging economies of the world, the journey to a bank branch for people living in rural areas can often take many hours, with ensuing losses in sales. → **Branchless banking** offers a solution to this problem. With the assistance of alternative instruments of payment such as mobile phones and mobile automated teller machines (ATMs), transactions can be processed without the instructing party having to visit a bank branch. Mobile banks travel to villages and thereby provide even the poorest entrepreneurs in the most remote areas with access to banking services. As a result of the increasing number of mobile phone users – more than four billion mobile phone subscriptions were registered in 2009, of which 80 percent were in developing and emerging economies – there has also been a rise in the number of services enabling payments to be made via mobile phone. By integrating disadvantaged people into the economy, branchless banking also supports global economic growth. **Fabienne de Lannay**



The Leader's Way

Dalai Lama and Laurens van den Muyzenberg
Campus, 2008
255 pages.
ISBN-13: 978-3593386874

What do corporate and spiritual leadership have in common? Both seek to produce the greatest possible impact. And who is better placed to dwell on how that might be achieved than a Buddhist monk and a Western business specialist? For the best part of two decades, the Dalai Lama and the management consultant Laurens van den Muyzenberg have been debating the challenges and problems of the global economy, as well as what suggestions and guidelines the Buddhist world view might contribute in the drive to combat the darker side of globalization and promote responsible economic behavior in the interests of all. These discussions have given rise to a joint book project. In addition to calls for ethical conduct, an investigation of leadership concepts and examples of success, this well-structured book also contains two sections with exercises to sharpen the mind. It is not just executives and management consultants who are encouraged to gain inspiration from this work. Ultimately, everyone has to do some leading – if only of themselves. © © getAbstract



What Got You Here Won't Get You There: How Successful People Become Even More Successful

Marshall Goldsmith with Mark Reiter
Riemann, 2007
382 pages. ISBN-13: 978-3570500859

Those who are successful typically consider their success well-earned and lasting. Marshall Goldsmith wants to shatter any illusions that success earns us the right to simply sit on our laurels. Indeed, the opposite is true – we can't afford to stop moving. Firm belief in ourselves may have its uses, but it also holds us back from further success – because it makes us blind to our weaknesses, particularly the bad habits that tend to irritate those around us. The higher we climb, the more our own behavioral quirks are likely to get in our way. Goldsmith's aim is to guide his reader to this insight. He does this well, while exhibiting an impressive understanding of everyday weaknesses and providing entertaining examples. The typical American fixation with success can be found here in abundance, in keeping with the motto "Yes, you've been successful so far, but you need to become even more so!" Still, the book has a lot to recommend it: Ideally, readers will not only steer themselves to more success, they'll also have more time and happiness to share with others. © getAbstract

Music and the Common Man

The world premiere of **Wolfgang Rihm's** new opera "Dionysos" takes place on the Salzburg Festival on July 27. Shortly after he completed the opera, we spoke with Wolfgang Rihm about the role of the composer and music's chances of survival in contemporary society.



Interview: Max Nyffeler

bulletin: It is said that the artist wants to be loved by the audience. Is that also true of you?

Wolfgang Rihm: Of course. But not at all costs. You should not pander to people.

For a long time you were in no position to. At the beginning of your career, in the early 1970s, your work met with widespread disapproval. How did you find that?

Tough, but it also toughened me. That said, you have to realize that this disapproval came mostly from "second-rankers": from people that considered themselves to be on the side of the "good" or the "real" avant-garde.

At that time you were held to be the epitome of a "German composer": too heavy, too deep, too conflict-ridden. In Germany critics took a negative view of this. What were the reactions abroad?

In England, America, the Netherlands – and to some extent also in France and indeed even in Italy, it seems that I was initially perceived as a welcome personification of the "ugly German." It was as if I had studied under Hitler. You were still very much aware that the war had ended only 30 years earlier. And whereas at home I was reproached with being some kind of new Sibelius, in countries where Sibelius is popular my music was dismissed as "typically German," i.e. "intellectual" music that "sounded bad."

But your music was performed.

I was lucky that there were knowledgeable people everywhere who supported me. At crucial moments there were always individuals who championed my work. For various reasons, the vast majority – the critics were also their voice – were initially dismissive and even hostile, for the most part. But that changed over time. And anyway, the reaction of the audience was usually far more positive than that of the so-called experts.

Robert Spaemann, the doyen of contemporary German philosophers, defined the function of philosophy as follows: "Essentially, it has nothing else to do than to protect what the common man has always known from the unremitting efforts of a gigantic sophistry to persuade him otherwise." An appeal to common sense, which unfortunately, Spaemann says, is no longer so easy today. Does this not highlight part of the problem between contemporary music and its audience?

I don't want to force the common man to preoccupy himself with music as art. But at the same time he should not be denied the opportunity to be receptive to this music; he should have the occasion to listen to it. Unfortunately, the world that the mass media presents him today only has room for majority tastes. However, it should be possible for everyone within their own social reality to have the opportunity to encounter art forms that do not fit the pre-prepared formats of the mass media! That would be a liberating moment.

How can you get there?

You should be able to prepare yourself and interact with the corresponding forms of expression over and over again. To take an interest in art you need a minimum amount of knowledge. This involves a contradiction: We long to be "popular with the masses," but we do not give them the chance to prepare themselves to interact with the new art. And if they don't suddenly start cheering, it is used as an argument against any form of new art. That is a huge mistake.

Karl Valentin, the Munich-born comedian and slapstick artist, remarked: Art is beautiful, but it's a lot of work.

He was right, as always. In the case of sports it is obvious to everyone: No one achieves anything without training.

Even spectators have to have some knowledge to understand >





Wolfgang Rihm was born in Karlsruhe on March 13, 1952, and made his first attempts to write music at the age of 11. In 1972 he passed both his school-leaving examinations and the state examinations in composition and theory of music at the music academy. In 1974 he received his first major award, the City of Stuttgart Prize for composition. Many others followed, including the Beethoven Prize of the City of Bonn in 1981, the Rolf Liebermann Prize in 1986, and the Ernst von Siemens Music Prize in 2003. In 1989 Rihm received the Distinguished Service Cross of the Federal Republic of Germany and in 2004 the Service Medal of the State of Baden-Württemberg. Since 1985 he has been professor for composition at the Karlsruhe Music Academy. In Switzerland, Rihm has been composer-in-residence at the Lucerne Festival in 1997 and the Davos Festival in 2007; in 1998 he was awarded the Jacob Burckhardt Prize of the Johann Wolfgang von Goethe Foundation in Basel. After fellowships in Rome (1979/80) and Paris (1983), Rihm was awarded the Prix Composition Musical de la Fondation Prince Pierre de Monaco, his first important prize from outside the German-speaking area. This was followed in 2001 by the Royal Philharmonic Society Award and in 2010 by the Golden Lion in the music section of the Venice Biennale. His oeuvre currently comprises some 300 compositions. schi

what it is all about. Art, however, has this false aura that does not allow the recipient to do anything, except stand around waiting to be served and consume. It is time to recognize a person's own input for the value that it represents: a knowledge about art and the desire to enter into a dialogue with it. However, many regard just the idea of making an effort to acquire an understanding of something as unreasonable. Unfortunately, this seems to be a general social phenomenon and is not limited to art alone.

The argument then goes: "But Mozart is also nice to listen to." Mozart is still a challenge today, just as he was for his contemporaries. In 1826, Hans Georg Nägeli, a Zurich writer and publisher of works on music, criticized Mozart as too complicated, maintaining that he mixed vocal and instrumental styles and made excessive use of contrast.

The demand for a feel-good aesthetic was current even then. And that at Mozart's expense.

I am not looking to educate people. I would be satisfied if this principle of pleasing people without any effort on their part were occasionally called into question. People want to have fun and think it is enough to be clueless. I have nothing against fun. But I would like it if people were allowed to also be sensible about it so that they can perhaps have even greater fun.

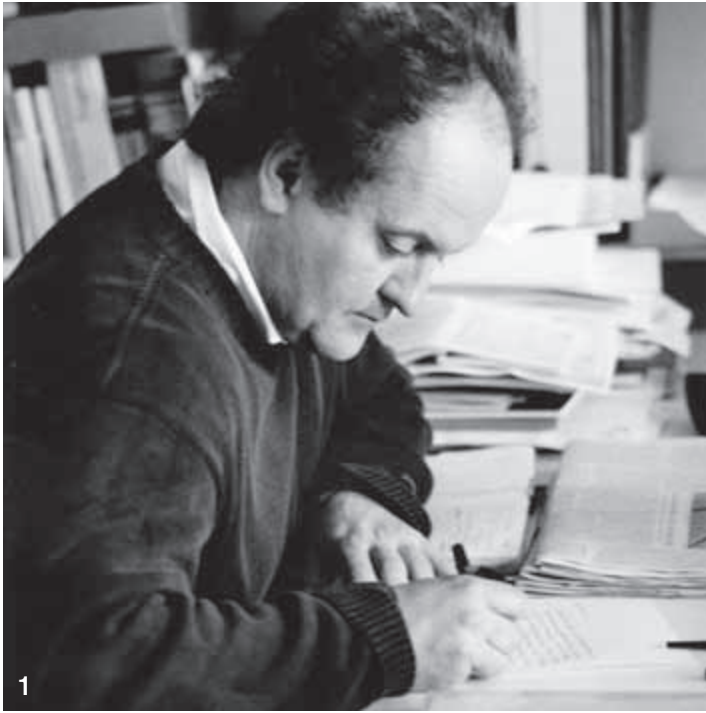
Today the economic imperative is gaining ground the world over. Everything is measured in terms of money. What are the chances that art forms will survive whose value cannot be calculated in terms of money alone?

First, you need to distinguish between the different arts. An image is the artwork itself, and hence a value, whereas a music score is only a set of directions that point the way to a value. The musical artwork is created only in the playing and each time it has to be produced anew. The CD is nothing more than a piece of preserved material that fetches a moment from the distant past into the present.

And what does that signify for the survival of the artwork? In the fine arts all it needs is just one or two wealthy collectors to take an interest in an artist to save both the artwork and its creator. The artist's sculpture may stand in the garden of some plutocrat or other, or his painting will disappear into a bank safe; in principle, however, their survival is guaranteed. Music, on the other hand, is a social process involving many people: a publisher to produce the material to be performed, organizers to program the work, interpreters to give sound to the music, and an audience to listen to it. Only then is it possible for the creator to live from his work.

Is there not a danger today that society will no longer want to raise the money for this complicated process?

It is a question of values. More important than the marketability of music, which is an undeniable fact, is its spiritual and intellectual content, its emotive energy: Do we want to continue to foster these values, or shall we sacrifice them? Ultimately, the impetus for this must come from the responsible individuals who have the final say over financial and organizational competencies. They must openly commit themselves to these values and thus give the general public the possibility to explore music as art that has something to say about our contemporary world. When these decision-makers believe that they should hand over their responsibility to statistics, the momentary preferences of majorities, and fashion, then the future is bleak. But I am optimistic. >



1 A string quartet in the making. **2** Wolfgang Rihm enjoys sharing his experience with young musicians, as professor of composition at the Karlsruhe Music Academy or in a master class, such as here. **3** “I composed the score especially for her, just as Mozart and Richard Strauss wrote for their singers,” says composer Wolfgang Rihm about Proserpina and the soprano Mojca Erdmann. Goethe’s monodrama set to Rihm’s music premiered on May 2, 2009, at the Schlosstheater Schwetzingen, Germany, with Hans Neuenfels directing. So it’s no surprise that Mojca Erdmann is also singing in “Dionysos.” **4** An interview with Graziella Contratto, the artistic director of the Davos Festival, where Wolfgang Rihm was composer-in-residence in 2007.

You have taken part in many festivals as composer-in-residence, and this summer the Salzburg Festival is again showcasing your work; you have been a guest there once already, in 2000. What does it mean for you to be celebrated in this fashion at such a prestigious place?

A festival does not have an anonymous structure; it is always organized and run by committed individuals – “responsible people” – who put together a program. In this case it is Markus Hinterhäuser, in 2000 it was Hans Landesmann. Whether the selection is an adequate “representation” is unimportant to me. As it is, only a small excerpt of my oeuvre can be presented at any one time. It is far more important that a competent person with whom, on top of everything, I also get on well is interested in my work and stages it in a well-considered dramaturgy. This is precisely what I was talking about earlier: informed responsibility.

By the standard of the Salzburg Festival, the Davos Festival founded 25 years ago is a small but select festival. You were also invited to that festival a few years ago. What was special about the event?

Basically it is the same as in Salzburg: Everything depends on the individuals who create a festival’s profile. In Davos that person is Graziella Contratto. Of course, Davos has a much smaller budget than Salzburg, yet it still achieved an optimal result. In addition,

some of my students were also included and we performed a lot of chamber music, and I had the feeling that I was not a “representative” of the new music that one “unfortunately has to perform”; instead, I was taken seriously as an artist whose works the public could learn to “value.”

Today you are a widely performed composer, although you never made things easy for the public ...

... perhaps precisely because of it!

... and your catalogue of works starting in 1970 has now grown to more than 300 scores. The sheer range of music and performances almost makes one’s head spin.

Whose? Mine? Even if it sounds a little provocative: I rather feel that it is too little. In any case, to my mind everything I have done is tentative, and its reception is tentativeness itself. But that does not bother me. Tentativeness is part of human existence. The only thing that will make your head spin is a belief that you have a right to canonization. But that is not what I want. I want to be part of life. I am, with all my failings and strengths, a human being and not the “stone guest” in [Mozart’s] “Don Giovanni.” <

→ For further interviews with Wolfgang Rihm, visit: www.beckmesser.de (in German only).

Wolfgang Rihm’s fifth world premiere at the Salzburg Festival

This year’s Salzburg Festival showcases Wolfgang Rihm. Aside from his opera “Dionysos”, 14 other events are dedicated to the German composer.

No Festival visitor will be able to escape Wolfgang Rihm this year. Hopefully! Fortunately! His opera “Dionysos” will have its world premiere on July 27, conducted by Ingo Metzmacher. There will be three further performances on July 30 and August 5 and 8. Friedrich Nietzsche’s late cycle of poems, “Dionysos Dithyrambs”, is the inspiration and starting point for this work. Pierre Audi is the stage director, Jonathan Meese is responsible for the set design, Jorge Jara for costume design, Jean Kalman for lighting, and Klaus Bertisch for dramaturgy. Johannes Martin Kränzle sings the lead role, with the support of soloists Mojca Erdmann, Virpi Räsänen and Matthias Klink. Chorus and music are provided by the Concert Association of the Vienna State Opera Chorus and the Deutsches Symphonie-Orchester Berlin.

Activities parallel to the opera include not only the Credit Suisse “Summer Encounter”

for creative media, but also the four-part discussion series titled “Exegese Rihm.” Markus Hinterhäuser has also put together a 10-part concert series, including two by the Vienna Philharmonic, called “Kontinent Rihm,” which will take place from July 29



Sketch of the set design by Jonathan Meese for the opera “Dionysos.”

through August 22. In 2000 the Salzburg Festival also dedicated a concert series to Wolfgang Rihm under the “informed responsibility” (Rihm) of Hans Landesmann. By this time, Wolfgang Rihm was already recognized as an established composer.


This was by no means the case at the time of his first visit on August 17, 1982, for the world premiere of “Fremde Szene,” a work commissioned by the International Foundation Mozarteum Salzburg. The next world premiere at the Salzburg Festival was the requiem “Mein Tod” set to a text by Wolf Wondratschek, which took place on August 16, 1990. Although Rihm delivered the opening address at the 1991 festival, festival visitors had to wait until August 11, 2003, for his next world premiere, in which Marjana Lipovšek interpreted the Lavant-Gesänge based on poems by Christine Lavant. This was followed on August 15, 2006, by Concerto in One Movement for cello and orchestra commissioned by the Salzburg Festival and conducted by Paavo Järvi. schi

→ www.salzburgerfestspiele.at

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