



BFSI SECTOR TURNS

GREEN

The BFSI sector is keenly adopting green policies, practices and technologies with the aim of being more sustainable and protecting the environment:

Institute for Development and Research in Banking Technology defines Green Banking as an umbrella term referring to practices and guidelines that make banks sustainable in economic, environmental, and social dimensions. It aims to make banking processes and the use of IT and physical infrastructure as efficient and effective as possible, with zero or minimal

impact on the environment. According to Indian Banks Association, a Green Bank is a bank, which considers all the social and environmental / ecological factors, with an aim to protect the environment and conserve natural resources. It is also known as ethical bank or sustainable bank.

Jyothirlatha B., Chief Technology

Officer at Godrej Housing Finance; **Rahul Agarwal**, Chief Technology Officer at Capri Global Capital; Vishal Nagadiya, Chief Technology Officer at Netafim Agricultural Financing Agency; Atul Khirwadkar, GM & CEO at Kalyan Janata Sahakari Bank; P. Srinivas Rao, CIO at Kalupur Commercial Cooperative Bank and Arti Dhole, Chief Information

Officer at Cosmos Bank, discuss threadbare various aspects, related with Green IT and provide their insightful vision.

IMPACTFUL INITIATIVES

Technology, on one hand, has the potential to decrease pollution by providing new ways to the organization. It aids in reducing carbon footprints with increased use of paperless technologies and online video conferencing facilities. On the other hand, extensive use of this technology generates environmental pollution due to energy guzzling devices such as datacenters, computers, servers and equipment. Such trade-off between these opposing dimensions will turn out to be positive only when the organizations take steps to reduce the environmental pollution caused by technology. Jyothirlatha B., Chief Technology Officer at Godrej Housing Finance, explains: “In last 12 months, we have been extensively working on our server and printer consolidation, virtualization and energy consumption efficiency initiatives. Our office premise has been designed in a way to reduce energy consumption, and have our group level initiatives of sourcing energy from renewable sources, and reducing specific energy consumption, etc.”

Capri Global Capital strives towards collective progress and wellbeing. The pandemic has hastened a rise in remote working. Capri has implemented a ‘work from anywhere’ policy for its technology team and employees. It has not only helped the company provide unconventional flexibility to its team but also has helped it make progress on more sustainable business models. Rahul Agarwal, Chief Technology Officer, informs: “We have taken a conscious note that in an increasingly complex and interconnected world, rising environmental and social challenges are redefining the way we do business and how we mobilize our capital. In the last few months, we have taken voluntary commitments to adopt practices such as reducing energy consumption, recycling old equipment in an environmentally



Vishal Nagadiya informs that NAFA has migrated all its data and server information on cloud

responsible manner, and taking steps to manage a company’s carbon footprint. To save more energy and be less reliant on bulky energy-consuming physical IT infrastructure, we have moved towards cloud servers. Currently, more than half of our systems are running on AWS and Azure.”

DIGITAL FIRST POLICY

Netafim Agricultural Financing Agency (NAFA) is an NBFC that aggressively pursues a digital first policy, even while recognizing that many of its customers in semi-urban and rural areas still require physical servicing. Even as NAFA performs this balancing act, it has incorporated into its policy framework the principles of green computing. There are 2 fundamental Green IT initiatives that it has been working to usher in. One is striving for energy efficiency and the other is reducing e-waste. Vishal Nagadiya, Chief Technology Officer, says: “To achieve optimum energy efficiency, we have been coming up with incremental innovations that help us reduce the energy consumption of the electronic items. A simple example is the mandatory requirement to keep the

laptop on sleep mode after 5 minutes of user inactivity.”

Another simple step is to promptly replace the defective batteries so that the users need not rely directly on the electric connection, thereby also saving a lot of electricity. Vishal adds: “More than 95% of our staff members have been given laptops as they are more efficient as compared to desktops. Besides, we have migrated all our data and server information on the cloud. For this, we have tied up with tier 4 data centers. This again helps us reduce carbon footprints as we cut down on space, air-conditioning, etc. In order to reduce e-waste, we send for scrapping only such inventory that cannot be repaired or refurbished. Hard discs and batteries will need to be scrapped but other items can often be salvaged or recycled. For instance, if the speaker or screen can be repaired or replaced, we will do that instead of scrapping the whole system.”

LESS PAPER, MORE VIDEO

Kalyan Janata Sahakari Bank has taken immense interest in implementing various Green IT initiatives. The bank has adopted green technology for last few years with specific intention to save nature and paper. Atul Khirwadkar, GM & CEO, recalls: “12 years ago we migrated to email communication internally and externally. There are no print copies of circular, but dedicated knowledge portal for entire staff to access circulars. With state-of-the-art tech initiatives at disposal, such as IMPS, net banking, balance enquiries, hot card services, statement by email, UPI, BNA, ATMs, notices via digital signage, SMS, links, own website for info on all products, online audit, loan origination for retail lending, etc, are already in place.”

According to RBI (IDRBT, 2013), green banking makes internal bank processes, physical infrastructure and information technology effective towards environment by reducing its negative impact on the environment to the minimum level. Atul updates: “In 2020, we started all meetings, internal as well as with customers on Zoom audio visual

method. This ensured compliance of all covid guidelines as also ensured that the business remains uninterrupted. Thus, virtual meetings were the find during the times of distress. Green pin through ATM was another key initiative introduced by the bank along with bill payment facility for customers.”

The Kalupur Commercial Cooperative Bank has revamped the data centre to put in place energy efficient equipment and cooling systems to reduce power consumption. P. Srinivas Rao, CIO, indicates: “Our bank has been replacing desktops with thin clients and LED monitors at branches to reduce power consumption. Thin clients are physically smaller than traditional PCs and have minimal resources such as CPU and memory with no / minimal local storage and, with a very cut down operating system (Windows 10 IOT). They consume much less power than a traditional desktop. They are typically used to connect to virtual desktops and apps running in the data centre. Though in our instance, there is no virtual desktop infrastructure (VDI) set up. About 350+ desktops have been replaced with thin clients. We have WFH solution in place to enable staff to work from home whenever required.”

Green IT is important because IT is responsible for about 17% of the world’s electronic waste and around 2% of the world’s CO2 emissions. This means that IT contributes to environmental degradation because the majority of all e-waste is dumped in countries, where regulations are less strict and because electricity, generated by fossil fuels, causes global warming. The impactful green IT initiatives in Cosmos Bank during the last 12-18 months are many, like green pin, server consolidation, online e-mandate and cash recycler kiosk. Arti Dhole, Chief Information Officer, describes: “Printing of PIN mailer and dispatching the same through courier is a time consuming as well as costly affair. The bank has introduced the Green PIN concept under which the customer can change their PIN on the go with any channel like ATM or internet banking or mobile banking. It is saving customer time, our cost, time for



Rahul Agarwal states that currently more than half of Capri Global Capital’s systems are running on AWS and Azure

pin printing, handling, security, dispatch, etc. Customer has a more convenience as they can set their PIN as own on ATM without hurdles of visiting branch in the counter time.”

SUSTAINABLE COMPUTING

Green IT refers to environmentally sustainable computing. The goal of green computing is to maximize energy efficiency during the product’s lifetime, and design algorithms and systems for efficiency-related computer technologies. One of the steps towards Green IT is server virtualization. Arti states: “We have started server consolidation using VMWare virtualization technology. This technology enables IT to reduce the number of physical servers and combine them into single hardware. It also enables high availability, easy recovery in case of hardware failure and quick implementation. We have consolidated 143+ existing physical servers into a single blade server chassis. This has reduced the requirement of procuring new servers for new applications. We have consolidated 300+ applications on VMware. Any future applications may be ported on this server with/without any

upgrades to this server.

Optimization of the IT infrastructure in Cosmos Bank is done in terms of online e-mandate facility. Arti adds: “The e-mandate integration with our internet banking application is facilitating hassle-free registration of standing instruction by customers through alternate modes. Due to this facility, our customers can create an authenticated mandate through electronic channel. This automation has reduced the mandate acceptance cycle time with secured and assured mandate. It will also helpful for our customers to purchase a product on EMI without major documentation. Now customers need not wait for a long for the same.”

Cosmos Bank has started cash deposit through recycler kiosk, also known as CRM (cash recycler machine), at its university road branch. Arti reveals: “We are implementing the same at some more locations soon. The CRM is capable with recycler functionality, which allows the reuse of deposited cash for dispensing purpose. The machine is also capable of identifying the fraudulent notes, fake or suspected notes. Cash deposit can be done by using your ATM card or even without using card (using account number) in any of the Cosmos Bank account for SB, CA, CC, OD accounts.”

NSDL has come with a unique product for bank-based participants to open demat accounts online and instantly using the existing to bank (ETB) KYC. Cosmos Bank has integrated with NSDL to open demat accounts in near real-time. Arti further says: “This account opening facility is currently provided through our bank’s branches. Customer on-boarding is done in few minutes as against few days in the previous process. Paperwork is reduced and limited only to providing customer consent for opening the demat account. Customer is provided with the account number instantly.”

MAJOR OPPORTUNITIES

Pandemic has increased the usage of technology in most of the organizations. Jyothiratha foresees: “With this rapid digital transformation, data center market is also expected to have massive

growth. Thus, as data center activity continues to surge, so will the energy consumption, which will make energy efficiency a focus for enterprises, public sector users and data center providers. Second, cloud adoption for effective management of server utilization as per workload and virtualization will increase. These, I believe, will ensure that Green IT support becomes a part of IT strategy while choosing the IT infrastructure life cycles and data center setups.”

Enabling technologies, such as RFID, sensor networks, biometrics, and nanotechnologies, are becoming common. **Rahul anticipates:** “The potential opportunity I could tell is the IoT revolution. Enabling technologies are bringing IoT forward to address various applications, including smart grid, eHealth, and intelligent transportation. For instance, RFID tag and sensor association could provide multiple new solutions to support green projects like efficient energy production chain, waste management, and recycling. Secondly, in the recent wireless era, the high usage of wireless devices consumes a significant amount of energy and emits a considerable amount of carbon while being used. Hence, the technology companies are presented with an opportunity to not only reduce the energy consumption in these wireless devices but also minimize the amount of carbon emitted by these devices.”

GREEN HARDWARE & DATA CENTER

NAFA has resolved to purchase energy efficient hardware whenever possible. Vishal updates: “In fact, we have started this process already. For instance, when a hard disc needs to be replaced, we don’t go for a standard one but opt for SSD which is more expensive. These systems allow for faster processing which automatically reduces the user’s time. Secondly, our plan is to ensure that the new inventory that we purchase are energy efficient. All these initiatives take care of the environment even as they result in savings for the company in the long run.”

Rao of Kalupur Bank believes energy



Jyothirlatha B. advocates that organizations need to align green IT measures to reduce operational costs

efficient data centres and buildings are major opportunities. Data centres consume a lot of power and cooling systems contribute to a large part of it. He says: “Green data centres that consume minimal power for operations and maintenance are the need of the hour. Cloud computing can help achieve efficiency in processing and utilization of computing infrastructure, and also minimize energy consumption.”

ARTIFICIAL INTELLIGENCE

Arti Dhole of Cosmos Bank sees a number of major opportunities for Green IT in the coming 1-2 years. She explains: “Process automation using Artificial intelligence (AI) has the potential to transform both front office and back-office operations with its self-improving programs. Our bank is using the software robots in business process functions, reducing the response time to customers by up to 60-70% in the areas of the back office like account opening, cheque truncation system and delivery channel support center. Automation of various departments like audit, account opening cell, HR department to reduce the cost of operations, paper and streamline

operations to deliver more value to customers, which further minimizes overheads by reducing the reliance on staff.”

A chatbot is a computer program that allows humans to interact with technology using a variety of input methods such as voice, text, gesture and touch, 24x7x365. Arti points out: “It plays a critical role in marketing. Chatbots scale up business operation. This solution will help us to solve customer queries instantly thereby eradicating human intervention.”

The green technology initiative has indeed huge potential which is not yet fully tapped. The IMPS and internet operations can be further extended to ensure seamless service to the customers at home. Atul of Kalyan Janata UCB feels: “The cyber security issues have shaken the confidence of average/common customer and hence he shies away from virtual banking. Once that confidence is restored, the green initiative in technology will do wonders as it can handle volumes with value for service. The internal control can be certainly strengthened by designing structured reports for internal control as a key risk management practice as also implementation of risk based internal audit. These opportunities must be explored through green technology to save huge costs of internal control as is envisaged by RBI.”

GOALS AND PROGRESS

Organizations need to prioritize the implementation of green IT and align green IT measures with the goal of reducing operational costs. Jyothirlatha says: “We, as an organization, believe in doing good while doing well. Our goals involve using energy-efficient equipment and green use by minimizing the energy consumption and appropriate disposal of e-waste.”

It is critical to note that Green IT initiatives shouldn’t be implemented haphazardly. As technology continues to evolve, the data stored through computing devices has grown increasingly prevalent. **Rahul alerts:** “For companies like us with a larger workforce, enabling employees to ‘work from home’, makes us susceptible to

various hacks and serious malfunctioning consequences. Given that, our proficiency in careful research and insights from a well-experienced team of professionals has helped us not only implement sustainable IT strategies but also be future-ready for such concerns.”

Capri is fully committed to implement as many initiatives as possible to reduce e-waste, consume energy, and reduce carbon footprint. Rahul further says: “Server virtualization, desktop virtualization, digitization of most of our on-field processes, going paperless are certain activities that are already implemented to a great extent and continuing to ensure progress within this year. We are way ahead with our goals.”

At the time of framing the policy framework and when NAFA procures hardware, the company does it with the goal of reducing the carbon footprint and decreasing the energy consumption. Vishal underlines: “While procuring inventory, we have to make sure they are more energy efficient. For us, it is continuous process, and our goal is to be even more efficient as technology is always evolving.”

In the past few years Kalyan Janata UCB's board has consciously focused on green technology and towards digital banking. Atul informs: “The bank desires to have anti-fraud solution for transaction monitoring in compliance with Financial Intelligence Unit India guidelines. This is ministry of finance's separate unit to which CTR, STR, etc, are submitted. The solution to such activity is not possible without machine learning and artificial intelligence. Our bank is in advance stage of talks with a reputed technology company to push these initiatives.”

Green banking is a pro-active way of energy conservation and environment protection. The prime benefit of the green banking approach is the protection of the natural resources and the environment. Atul elaborates: “Green banking avoids paper work to the optimum level and focuses on electronic transactions like use of ATM, mobile banking, online banking, etc, for various banking transactions by the customers. Electronic transaction not



Atul Khirwadkar updates that there are no print copies of circular, but dedicated knowledge portal for Kalyan Janata UCB staff to access circulars

only aids sustainability but also provides convenience to the customers as well as to the banks. Less paperwork means less cutting of trees.”

GOING SOLAR

Process re-engineering and digitization at branches and HO to reduce paper usage and optimize resource utilization are the green IT goals of Kalapur Bank. Rao updates: “We are also promoting self-service channels for customers for all services. Our bank launched view only mobile app for all non-financial transactions and inquiries. We aim to reduce power consumption thru energy efficient devices and utilization of solar power. 4 branches have been installed with solar power panels.”

Cosmos Bank's green IT practices/goals include reducing the use of hazardous materials, maximizing energy efficiency during the product's lifetime and promoting the biodegradability of unused and outdated products. Arti states: “Our bank has implemented various strategies to promote environmental-friendly practices. This had led to reduction in

paperwork, personal visits to branches by customers and consumption of power. With internet usage continuing to grow and more and more people using cell phones, tablets and other computerized devices, the environmental impact of IT is expected to increase.”

EVALUATION OF ASPECTS

Green design is an important part of any solution. Jyothiratha believes: “Designing a solution with optimized compute, storage and making entire product life cycle greener and flexible to make the solution available on demand is a very important aspect of evaluation.”

Capri looks at its business through the long-term lens of value creation for all its stakeholders that include customers, employees, business partners, regulators, investors and the community. Hence, it ensures all its business activities are conducted most sustainably with emphasis on social, environmental, and governance parameters. Rahul says: “We believe, technology, whether it is hardware or software, can be used more sustainably. Our goal is to work towards minimizing the impact of IT operations on the environment. We are recalibrating many strategies, to include a holistic assessment such as performance architecture, Cloud deployment, maintainability and custom development capabilities, cost, timeline to implement, low code systems, etc.”

When NAFA chooses a green option, it eventually also turns out to be a money saver. If an initiative reduces the consumption of electricity, it brings down the cost. It is the same with e-wastage. Vishal argues: “If you can recycle, you do away with the need to procure a replacement. So, that is the evaluation criteria.”

To give an example, NAFA already had a business continuity plan to take care of eventualities, though not specifically for covid. Vishal adds: “So, we had already made a purchase of all our inventories, including laptops. Unlike many other organizations that had invested heavily on desktops and systems and firewalls, which had to then switch to an entire new system, we were able to support

our workforce from day one without any major challenges.”

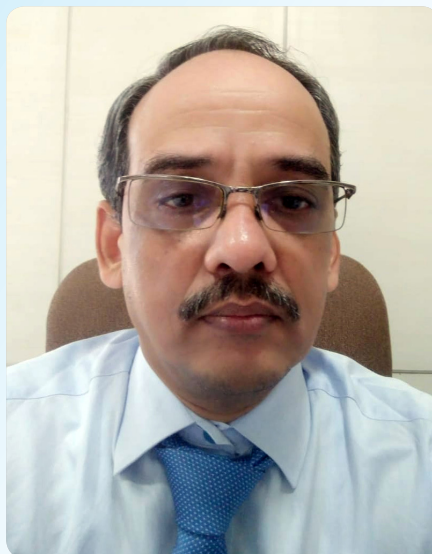
TECHNOLOGY EVALUATION

When evaluating an IT solution, there are certain green aspects the bankers look at during the evaluation. Atul categorically says: The key consideration is the investment needed and payback period. In addition, how will the solution be environment friendly is verified. The extent e-waste it may generate is also evaluated with proposed disposal with least of environmental damage. But then not every time we succeed in getting what we want, as the commercial and technology market is still not in tune with the environmental hazard that they need to avoid. So, some limitations are indeed there, and we all together can work for its elimination.”

Rao informs: “I look at virtualization features in the server infrastructure and energy efficiency ratings.”

Cosmos Bank evaluates the IT solutions which helps the bank in cutting costs, increasing productivity, improving the profitability, controlling and management of the NPAs, carry out the asset liability management, manage the changes in interest rates, handle the foreign exchange rate fluctuations, comply with the regulators’ requirements and finally improve the customer service to their best satisfaction. Arti elaborates: “Since study has shown that there is a positive correlation between environmental performance and financial performance, our bank is doing analysis of financial performance of the IT solutions as well as social and environmental performance while evaluating the IT solution. Green banking is also about making the society habitable without any considerable damage.”

During evaluation of IT solution, Cosmos Bank looks at certain set of green aspects. Arti adds: “We review and refine the software development life cycle. We study the algorithms, programming languages, APIs, and libraries to minimize carbon emissions. We do constant assessment of alternatives that might be more efficient. These assessments would test the software’s



P. Srinivas Rao reveals that Kalupur Bank has targeted about 160 remaining desktops to be replaced with thin clients in the current FY

compatibility across various energy-constrained hardware designs.”

Functions-as-a-service (FaaS) enable even more control over capacity and by extension, energy consumption. Arti further says: “Considering the agility and cost-efficiency enabled by cloud computing, the bank is proactively testing the technology especially Infrastructure as a Services and (IaaS) and Software as a Service (SaaS).”

EXAMPLES OF PARTNERS

There have been a number of examples of noteworthy green initiatives by partner companies of the BFSI entities. Godrej has partnered with AWS for entire workload management. Jyothirlatha explains: “Leveraging cloud for the suitable heavy workloads can improve energy efficiency and reduce carbon footprint significantly for companies. AWS cloud leverages renewable power. It is on the path of powering all operations with 100% renewable energy.”

Loan Organization Systems are used to run on physical servers and legacy code. Nowadays companies are building cloud-native and cutting-edge tech microservice

architecture. Rahul describes: “Our LOS partner falls in the same lines. We have a lot of fintech partners who are ensuring paper-less and digitize journeys. That saves time, fuel, cost, paper.”

One of NAFA’s partners is in a process of implementing solar panels in all their data centers. Vishal: “This helps them reduce energy cost and reduce non-renewable energy utilization.”

Atul enlists such examples: “The implementation of 2-factor authentication, by one of our technology partners, has been wonderful. Secondly, improvements in our app for financial transaction have indeed pushed our customers to digital banking too.”

Rao says: “Infosys has smart buildings and campuses for sustainable future. It also has green data centres.”

Arti says: Examples of such initiatives by our partner companies include self-service passbook printers, kiosks (multifunction kiosks and self-service kiosks), cash deposit machines, which have reduced banks internal carbon footprint. Online banking includes internet banking, mobile banking, tab banking, phone banking, RTGS and NEFT transactions etc. The functions involved are pay bills online, online deposits, fund transfer, account statements etc. Through these banking activities banks are ultimately consume less paper, less energy and less expenditure on natural resources.”

TARGETS, PLANS FOR FUTURE

Jyothirlatha reveals: “Server consolidation, choosing the solutions and partners with green product life cycles and efficient management of e-waste continue to be our focus areas in the coming years.”

Capri is committed to digitize all its processes and make it a high-end and paperless company in the future. The company is digitizing its lending journeys to save paper, time, fuel and cost. Rahul points out: “This is done to completely transform the business tech models by end of the current financial year. Also, all our new implementations are getting deployed on cloud. In the upcoming time, we will engage with our cloud partners

to implement deeper strategies. We are on a journey to build an array of cutting-edge tech systems in-house that would be done on a sideline of a simple strategy of recycling and repair than replace.”

One of the plans of NAFA is to have a paperless operation as much as possible but as an NBFC, it is required to maintain regulatory paperwork at the loan application stage. But Vishal clarifies: “All the subsequent internal transactions are now in digital. For documentation, we require customer’s signature on forms. We have now signed up with an agency to help us digitally execute the signing process. Similarly, we also will have a tie-up with a KYC partner. This is also in the process of going live very soon, so that on-boarding can be completely in digital mode.”

However, many of NAFA’s clients, who are farmers, especially those in tier-2 and tier-3 cities, still prefer a branch visit and cash transactions. So, at the moment, Vishal adds: “We are supporting both physical as well as digital transactions, but the goal is to help the customer have a digital journey, end-to-end.”

The change is happening gradually. NAFA used to take post-dated cheques from customers at the time of issuing loans but now opts for NACH system or electronic authorization of banks for payments. Its EMIs are also mostly e-payments now. Vishal concludes: “Finally, we are also exploring partnerships with fintech companies that support the agri-business and this would again help in digitization efforts.”

Kalyan Janata Bank is looking to implement risk practices with risk-based internal audit (RBIA) and internal control mechanism. Atul reveals: “We are implementing fraud alert solution to protect our customers’ interests. Leveraging the technology, for the comfort of the customer through his smart phone, will be the key project we are focusing.”

Urban cooperative banks in the country are indeed impacting economic growth and development, both in terms of quality and quantity may be on a small scale, but in an emphatic way. In general,



Arti Dhole informs that Cosmos Bank adopts comprehensive business models to ensure low-carbon transformational growth across the value chain

banking sector plays an important role in promoting environmentally sustainable and socially responsible investment. Atul adds: “UCBs may not be the polluters themselves, but could be inadvertently supporting polluting industries. UCBs need to be more active in communicating the green banking concept and its associated benefits to the consumers. UCBs must focus on promoting the consciousness and benefits of the green banking to the employees, who are in direct touch with the customers.”

Rao reveals: “We plan to replace all the end-of-life devices with energy efficient devices and dispose of e-waste in an eco-friendly manner. Our bank has targeted about 160 remaining desktops to be replaced with thin clients in the current FY. We have plans to maximize digital sourcing of customers thru internet and mobile banking channels.”

Arti indicates: “We develop and adopt comprehensive business models to ensure low-carbon transformational growth across the entire value chain, and thus contribute towards worldwide efforts to

limit global warming to below 2°C. Green banking is the term used by our bank to make it much more responsible to the environment.”

GREEN LENDING

The green banking initiative entails bank to encourage environment friendly investments and give lending priority to those industries which have already turned green or are trying to go green and, thereby, help to restore the natural environment. It means combining operational improvements, technology and changing client habits in banking business.

Arti adds: “For example, the bank prefers an investment in a factory that invests in expensive pollution control technology as a result showing a lower rate of return than an investment in the factory that pollutes heavily (and passes on the costs to the society at large) will generally have a higher financial rate of return. Bank believes in maintaining productive harmony between man and nature.”

Bank promotes green banking by giving more weight to environmental factors. Arti lists out: “Bank checks all the factors before lending a loan, whether the project is environmental-friendly and has any implications in the future. The loan will be awarded only when borrower follow all the environmental safety standards.”

Green banking products include green loans, which means giving loans to a project or business that is considered environmentally sustainable. Arti explains: “Green Mortgage refers to type of mortgage that provides you a money-saving discount or a bigger loan than normally permitted. Green debit cards may be in form of environmentally friendly rewards or using biodegradable debit card materials or promoting paperless banking. In case of green saving accounts, bank makes donations on the basis of savings done by customers. The more they save, the more the environment benefits in form of contributions or donations done by banks.”

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