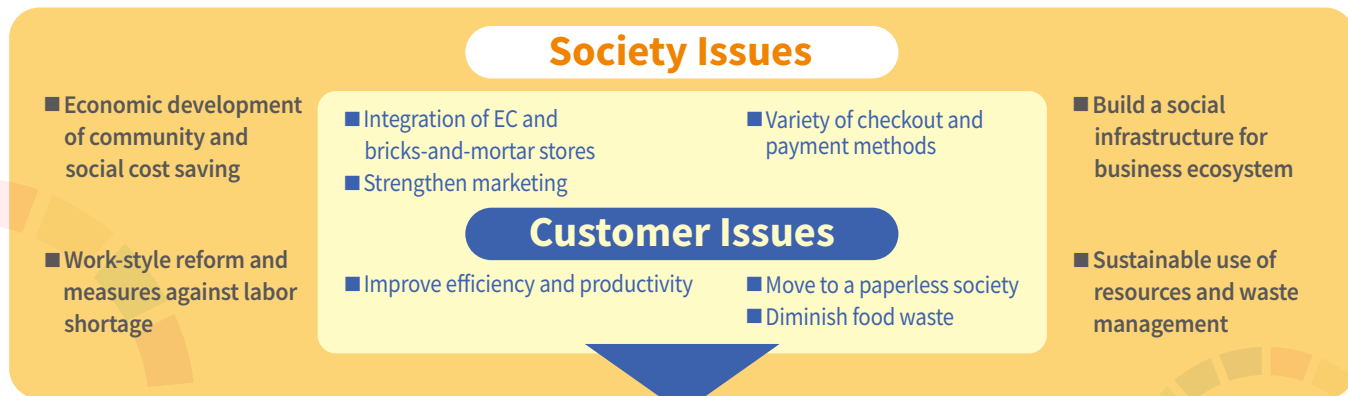


# SDGs × Toshiba Tec

Toshiba Tec, as a solution partner, focuses on its efforts to implement the SDGs along with customers by contributing its value creation in “retail”, “office”, “logistics” & “manufacturing”



## Toshiba Tec Challenges for SDGs



Contribution to the environment with only one technology to “erase” printed text and “reuse” paper

## “Loops” paper reusing system

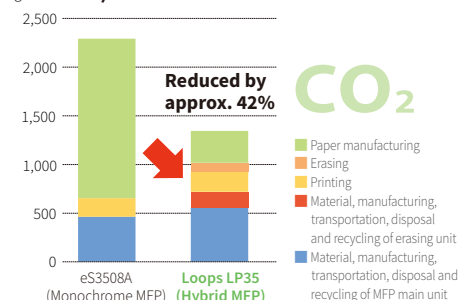
The contribution the hybrid MFP “Loops” makes to the SDGs has been recognized, and eventually won two awards: Excellence Award at the 1st EcoPro Awards and Eco Mark Award 2018 Excellence Award, for enabling regular printing as well as erasable printing on one single device.



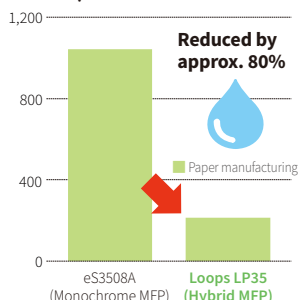
### Contribution to the environment

Paper use reduced by reusing paper. Life Cycle Assessment (LCA) indicates an approx. 42% reduction in CO<sub>2</sub> emissions and an approx. 80% reduction in water use.

#### 1) Reduction in CO<sub>2</sub> emissions



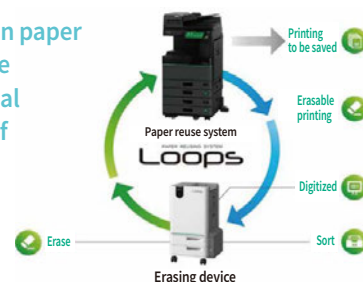
#### 2) Reduction in water use



\* Criteria used in the calculation of CO<sub>2</sub> reduction / basic unit Electricity when used: Calculated based on typical electricity consumption (TEC), Number of printed sheets of paper: 270,000 sheets/5 years, Using the same paper 5 times, Calculation method: Third-party verification by British Standards Institution Japan, CO<sub>2</sub> (News Release issued by the Agency for Natural Resources and Energy, Paper (The 2011 edition of “Life cycle CO<sub>2</sub> emission of paper/cardboard” by the Japan Paper Association)

\* Criteria used in the calculation of water reduction Corrected by Toshiba Tec based on the estimate by Itsubo Laboratory at Tokyo City University Number of printed sheets of paper: 270,000 sheets/5 years, Using the same paper 5 times

Reduction in paper use with the conventional approach of printing



Eco-visualization Effect of paper reduction easily visualized

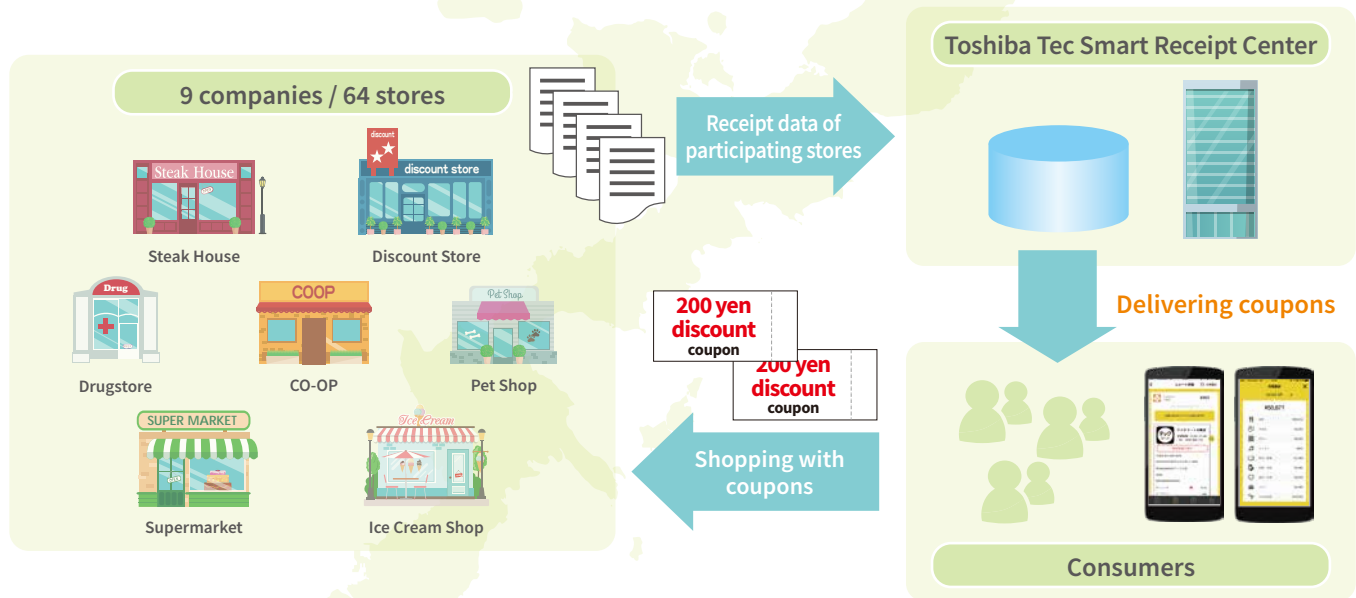


# Project to Improve Living Convenience



## Contribution to Regional Economic Revitalization with Smart Receipt

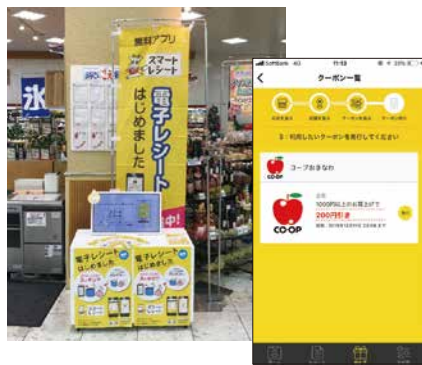
Okinawa has a large number of our customers (retail stores) among the 47 prefectures. Also, the local “Yuimaru” spirit of mutual aid takes a strong hold in Okinawa. That’s why Okinawa was singled out for this project to improve living convenience using Smart Receipt (e-receipt), and it was implemented for 7 months from September 12, 2018 to April 21, 2019. It was the first large project in Japan in which everyday shoppers, 9 regional companies and 64 stores participated. The aims are to familiarize users with Smart Receipt and achieve promotional partnership between stores, regardless of what business they are in or whether they are competitors.



### ❖ Acquired approx. 7,000 users with special in-store events and coupons!

#### 1 Promotional partnership through coupons

Recruiting new members and implementing promotional partnership through in-store events and coupons under the slogan of “Smart Wallet with E-receipt”



#### 2 Mutual invitation through coupons



#### 3 Mutual invitation and reception through coupons

Inviting supermarket shoppers to restaurants by offering restaurant coupons

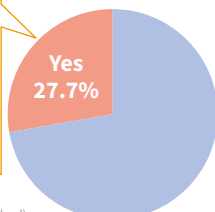


### ❖ More than half of users satisfied with Smart Receipt, and experienced shopping around

Q. After installing Smart Receipt, have you shopped around at different stores?

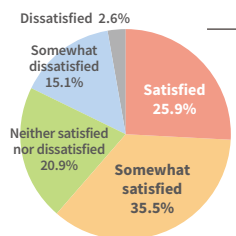
26.5% of members who shopped around have shopped at more than 3 companies

6 companies	0.4%
5 companies	1.1%
4 companies	3.6%
3 companies	21.4%
2 companies	73.5%



\* 7 companies: None  
\* 8 companies: 1 (Party involved)

Q. Are you satisfied with Smart Receipt services?



Satisfied with convenience of Smart Receipt

Receipt amount to be calculated	57.8%
Coupon availability	54.8%
Receipt visibility	46.2%
Receipt delivery time	18.7%
Data output	11.8%
Entire design	5.6%
Other	3.4%
None	2.1%

In this project, store owners/managers held periodic meetings to report progress and exchange opinions mutually. Even after completion of the project, the meetings have continued as “User Meeting” to expand joint sales. Smart Receipt has been instrumental in creating new value while revitalizing the region, regardless of what business stores are in or whether they are competitors.



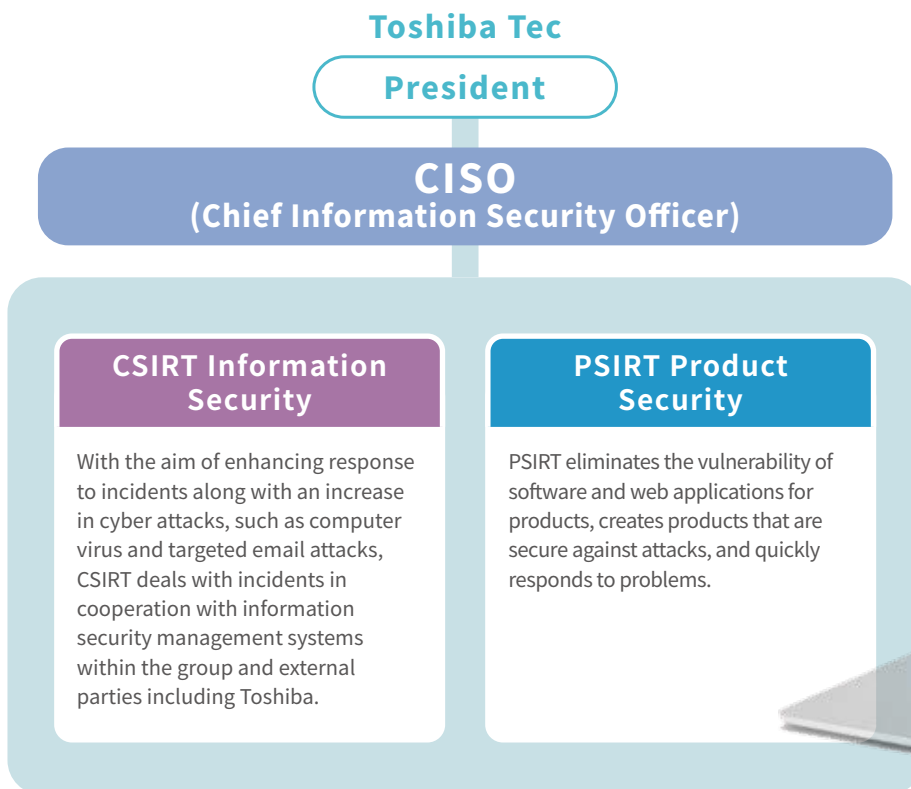
# Toshiba Tec's Cyber Security Measures to Protect Systems and Products from Cyber Attacks

In recent years, cyber attacks, which target customer information and important engineering data obtained by companies, are increasing. Meanwhile, appropriate investment judgment on IT and security, as well as prompt action in the case of a major security incident that affects business management are essential as corporate strategies. In April 2018, we, Toshiba Tec, established a Chief Information Security Officer (CISO) and Product Security Incident Response Team (PSIRT) to implement cyber security measures in the aspect of product, along with Computer Security Incident Response Team (CSIRT) to implement cyber security measures in the aspect of information security. We added professional members from each division to build a cyber security system that can handle security matters in every aspect.

## Cyber security system

We have established a network for information sharing with a focus on CISO as One Ttec, while dealing with incidents in accordance with our in-house network for PSIRT/CSIRT.

We promote security measures in a rapid and consistent manner for cyber security risks in information systems, products and services. Meanwhile, we enhance cyber security governance under CISO.



### Message from Takeshi Eguchi, CISO Vice President

As the first CISO, I endeavor to enhance the product security and information security of Toshiba Tec Group. Many of our products are connected to the network. Therefore, it is essential to promote measures to enhance security in order to protect our customers' assets. The Cyber Security Management Guidelines were formulated by METI, in other words, security requirements are increasing in society. Accordingly, we have built a cyber security system to promote measures to enhance security. We hope to create products that our customers feel comfortable using while further enhancing security.

# Toshiba Tec Cyber Security Measures

## e-STUDIO Digital MFP Series



Digital MFPs incorporate data storage that allows the user to store document data as well as a document emailing function. Many office documents contain sensitive information, including personal data, privacy information, and corporate information. It is necessary to protect information assets from cyber attacks. Various security functions are required for digital MFPs to protect users' information assets, such as user/card authentication, access control, a self-encrypting HDD with a wipe-out function, network traffic encryption, firmware integrity assurance, secure printing, audit logging, and wrong transmission prevention.

The e-STUDIO series is certified under the Common Criteria (CC) for Information Technology Security Evaluation that is compliant with HCD-PP (Hard Copy Device- Protection Profile), the latest and highest security standard for MFPs.

CC is an international standard for information security certification and a recognized standard to evaluate if security functions have been properly developed. HCD-PP requires the use for cryptographic modules equivalent to the FIPS 140-2 standard that is very difficult to comply with. The HCD-PP-certified MFPs are expected to become increasingly disseminated since they are recognized as digital MFPs with robust security by third party organizations.



Common Criteria



User/card authentication functions help to prevent misuse of MFPs and data stored in MFPs from being leaked.



All protected assets in the MFP are protected by encryption. Data and TLS in the network can be protected by IPsec.



An Opal SED HDD with a wipe-out function is included as standard. A function is provided, which automatically erases the encryption key if someone attempts to steal HDD and illegally read data, to protect all data in the HDD from leakage due to theft.

### HCD-PP security features

- User recognition and authentication
- Access control
- Encrypted communication
- Self-test
- Auditing
- Update verification
- Storage encryption
- Fax/network separation
- Overwrite erasure and complete wipe-out

## CT-5100 Card Settlement Terminal Series



Payment and settlement methods are diversified and the typical one is credit card settlement with an IC card. For credit card settlement, sensitive data, such as credit card numbers and personal information, is handled. If some of the data were leaked and misused due to cyber attacks, credit card users would suffer significant damage. Therefore, the Japanese government designates credit card settlement services as one of the 14 critical infrastructure sectors that have a significant impact.

Manufacturers engaged in development and production had produced and marketed settlement terminals according to their own security standards, respectively. However, the Payment Card Industry Security Standard Council (PCI SSC) was established in 2006 and global security standards were developed. The Payment Card Industry PIN Transaction Security (PCI PTS) is one of the standards. PCI PTS is a high difficulty standard that is required for settlement terminals to enter PIN.

The PADCT-5100 PIN Pad connected to the CT-5100 card settlement terminal series is certified as conforming to the PCI PTS 4.1 standard to provide safe credit card settlement. PCI PTS specifies a wide range of requirements, such as security functions and product management for software and hardware, necessary for settlement terminals. In addition, the CT-5100 uses a closed operating system instead of an open one such as Android and Linux, and incorporates authentication and encryption functions into all built-in software, to maintain robust security against outside hacking. The supplied tamper-resistant function helps to protect sensitive data from external illegal attacks



CT-5100 (Main unit)

PADCT-5100 (PIN Pad with IC card reader/writer)

