



## Product Case Studies

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## PRODUCT CASE STUDY

### Introduction

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#### CASE STUDY

##### *Reducing Cost*

See how to significantly reduce costs by using Green Screens Web and Mobile Terminal products. Not all users need desktop computers. Using tablets or Chromebooks can make a huge difference.

#### CASE STUDY

##### *Outsourcing*

Many organizations move their hardware to the cloud to minimize maintenance efforts, cost and to increase productivity. Even outsourcing to the cloud reduce costs, it is not free. See how Green Screens Terminal Service technologies help to minimize cloud costs even more.

#### CASE STUDY

##### *Security*

Going to the cloud and web technologies, extra care should be taken for security. Green Screen Terminal technologies implement multiple layers of security measures to protect sensitive information's. See how we implemented multiple layers of security to protect your data.

#### CASE STUDY

##### *Modernization – Integration - Transition*

Migrating old technology based solutions is expensive, resource and time demanding task that takes years to migrate. We can help with that by easing transition with great integration flexibility including modernization features which will transform green screens into a modern web-based user interfaces for web and mobile.

#### CASE STUDY

##### *Employee performance*

In a set of short stories, we will present how employees in your organization can benefit from our products and how they can increase their performance.

## PRODUCT CASE STUDY

# WHY Green Screens ?

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### CASE STUDY

#### *Reducing Cost*

##### **Introduction**

Large national hospital organization with thousands of doctors across country access to the central system by using two enterprise solutions. One is web based system for medical electronic documentation as patient records, medicament prescriptions etc. Another one is ERP system for which classic 5250 terminal client software is required.

##### **The Problem**

The most doctors do not need standard desktop computers. Still, client-based software requirement for ERP system access prevents migration to tablet devices as client software is only for desktop-based OS while other mobile solutions are not on enterprise grade level to support robust terminal access.

Desktop computers prices compared to tablets are in average 1:6 without including office tools licenses, extra monitor, regional maintenance contracts for technical support etc. In a 5-years amortization period price for 5000 workstations reach about 3 million USD. Just by moving from desktop to tablets cost is reduced by 2.5 million USD in technical equipment. Additional cost reduction is available because of low maintenance requirements for tablets.

##### **The Solution**

*Using Green Screens products which are developed with browser and mobile support in mind, we enable simple transition to tablets, mobile devices and Chromebooks. All office required tools and software as email client, office document tools, our web terminal with printing support and other software are already available on mobile devices.*

**„Green Screens ROI for licenses price in a company of that scale is less than 12 months. “**

PRODUCT CASE STUDY

# WHY Green Screens ?

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## CASE STUDY

### *Outsourcing*

#### **Introduction**

Many international companies operate in many countries having large number of remote branches. Providing access from different time zones, different environments with different Internet access, Internet speeds and sometimes limited local technical support. All this is a big organizational in infrastructural challenge.

Many organizations move their hardware to the cloud to minimize maintenance efforts, cost and to increase productivity. Even outsourcing to the cloud reduce cost, it is not free. Additionally, going online means increased security risk.

#### **The Problem**

Standard client terminal software has data transfers of about 2-4KB. From performance point of view, it's not too much, but this is software that requires desktop OS, local installation and maintenance. Requirement for 5000 workstations is about 15MB/s for transfer rate.

Competitor web based terminals generate web pages at server side with 10-20KB of data / screen. This creates bandwidth of 75MB/s for 5000 workstations in average. Extra processor resources for rendering and processing data streams are used which increase operational costs.

Calculating 75MB/s to a standard working day creates a gigabytes of data transfers which increase operational costs. Additionally, resources used in cloud to process data are increased which as a consequence increase operational cost.

Many competitor products require multiple server instances to handle large number of workstations which increase costs by several times. Adding redundancy instances for higher availability increase number of instances to maintain and support which not only create cost but increase a chance for human error: configuration, security setup etc.

PRODUCT CASE STUDY

# WHY Green Screens ?

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## The Solution

*Using Green Screens products data transfers / screen are reduced to 600-900 bytes. For 5000 workstation this is 3.75MB/s in average which is reduction of 20 times compared to competitor web based terminal products. Additionally, all terminal screens are rendered inside browser leaving server / cloud side resources usage significantly reduced which as a consequence reduce number of required parallel instances.*

**„Green Screens reduced resource and data usage significantly reduce operational cost. “**

*Green Screens Terminal service support clustered operational mode out of the box. That means, multiple instances can detect each other and automatically connect and synchronize. Changes in web administration console will automatically reflect to other running instances. This single point of configuration in cloud/cluster environment significantly reduce human error, simplifies configuration and maintenance.*

**“Exposing Green Screens to the Internet instead of main system significantly increase security. “**

PRODUCT CASE STUDY

# WHY Green Screens ?

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## CASE STUDY

### Security

#### Introduction

Organizations with remote branches / offices have requirement to access main system over the Internet. Exposing main system over the Internet is significant security risk. Many companies as a solution use VPN equipment or software based VPN clients to create secure Intranet within Internet.

#### The Problem

VPN devices solves the problem to some extent, but not for everyone. Having remote branches at international level requires local installation of VPN software or devices, their configuration, technical support etc.

By moving to the cloud means that in many cases there is no adequate support for VPN access, and even if there is, again requirement is local installation of various software and hardware products. Sometimes there is no local support or distributor for equipment which can cause temporarily inoperability of a local branch. This is reflected in operational money loss.

Exposing IBM I directly require not only standard terminal port to open but many other for DDM services etc. which is big security issue.

#### The Solution

*Green Screens Terminal service is a software service which operates as a terminal software proxy. This enables main system to remain in local network without Internet access. Remote branches will access through web browser or mobile application to the Green Screens Terminal service as a mediator. If required, access might be through VPN or directly over the Internet.*

*Green Screens Terminal service contains many security layers available out of the box as IP filter engine, mobile access control, encrypted data stream even SSL is not used, 2FA - OTP, 2-Way authorization with smart phone to prevent password hijack with keyboard loggers, URL reuse protection and many more advanced features.*

**„Green Screens Terminal service is exposed to the Internet instead main system which increase security. “**

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## PRODUCT CASE STUDY

# WHY Green Screens ?

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### CASE STUDY

#### *Modernization – Integration - Transition*

##### **Introduction**

In cloud and Internet era, we are witnessing that many big ERP systems are trying to find and applying various solutions for newer technologies including integrations with online services, modern web based applications, mail and office integration etc. Modernization and transition are expensive and long process which take years.

##### **The Problem**

There are three types of modernization techniques for legacy software: transpilation, screen scraping, and manual coding from scratch. Each of them have pros and cons and neither are universal solution. But, all of them are time consuming with different cost levels. Keeping old is also not a solution because of lack of developers with know-how and integration problems with new technologies emerging every day.

Transpilation is fast approach with great results regarding visual appearance. However, migrated code usually is machine generated and extremely hard to maintain.

Screen scraping is fastest approach but it creates only UI layer on top of terminal screens, while programs remains intact and not migrated to newer technologies.

Manual programming is slowest, the most expensive but with the best results. While manual transition finish, software itself will become technologically obsolete.

Whichever approach is used, problem lays in long time needed to migrate or not sufficient integration features with existing web environment.

Existing transpilation and screen scraping solutions requires a great technical knowledge, are too complicated to install, to use, and generally tides a customer to a solution provider.

Existing screen scraping solutions in the most cases create a single non integratable environment – standalone product.

Transpilation and screen scraping solutions are desktop based and usually not online / cloud ready or very hard to implement. Often, they are limited to specific environments.

Neither of existing solutions support report – spool files modernizations.

All of existing solutions are based on techniques developed in a time when those products entered to the market – 10-15 years ago. That means, in the most cases actual web technologies and standards are not used. Obsolete technologies are used in many cases which has a reflection on security.

## PRODUCT CASE STUDY

# WHY Green Screens ?

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### CASE STUDY

#### The Solution

*We in Green Screens believe that the best approach is integration mix of manual development from scratch segment by segment and simplified web based manual screen templating. This enables partial transition step by step, screen by screen, program by program to new systems, but also extend functionalities by enabling latest web technologies directly inside 5250 terminals.*

*Screen templating is our approach to screen scraping in a modern and simplified way allowing great flexibility and integration options. Our advantage is usage of simple HTML based web templates for UI screen design without server-side programming. Process is simple, does not require extensive knowledge, young inexperienced developers can do it, time needed for base level education is 2-3hr.*

**„Green Screens Screen Templating requires 2-3hr for education. “**

*Except screen templating Green Screens Terminal Service product support modern spool file (report) drivers allowing printing spools directly to browser as PDF, HTML, various image formats or even web standard JSON programable object.*

**„Green Screens Screen support spool modernization – web ready. “**

*We go one step further by enabling our modernization engine on mobile devices also. Develop templates in standard web forms and get great visual layer inside our mobile application.*

**„Green Screens Screen support modernization for mobile also. “**

*While migrating to the new system, existing one can be easily adapted to new environment with just a simple HTML template. If both environment are web based and use modern web standards then they can cooperate very well. From user point of view, they operate as a single entity. Integrated together it is hard to distinguish that this are two separate systems. They work as one.*

**„ Integrated together it is hard to distinguish that this are two separate systems. They work as one. “**

*Green Screens Web Terminal use extensive browser based API that can be used for integration with other products, to programmatically manipulate web terminal in all imaginable ways. **There is no any other terminal based product with such level of flexibility.***

PRODUCT CASE STUDY

# WHY Green Screens ?

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## CASE STUDY

### *Employee Performance*

#### **Introduction**

Imagine that you are a doctor which have a tablet instead of desktop computer. Now you are mobile, you can put your tablet into your scrubs and go to the patient. Then you can use apps on your tablet device to directly access patient record, to use specialized illness analytical software on the site etc.

Imagine that you are employee in a large warehouse and you have to access 5250 terminals from your mobile device to enter, check or correct data.

Imagine that you are working in a packet delivery service and need to access data on IBM I terminal application etc.

#### **The Problem**

Whichever case shown, it is related to remote mobile access. As standard 5250 terminal clients are desktop based and requires desktop OS, that will prevent switching from desktop computer to mobile device.

Mobile employees will have to use 2 devices for stationary and mobile work which increase operational cost. With standard approach, employees will have to take notes and later enter that data to desktop computer, employees will have to call someone in office for needed information etc.

Many additional integration tooling has to be created to help import/export data from mobile to main system as for barcode scanners etc.

All those short examples show loss of time and productivity no matter how simple and small they seem to be.

#### **The Solution**

*Using Green Screens mobile solution simply prevents all mentioned issues. Green Screens Mobile Terminal support high level of security, international keyboard support, network switch support without losing terminal session, contains free camera barcode scanner and support for printing. With Green Screens Terminal for mobile there is no need for desktop computer anymore which increase employee performance and reduce operational cost.*

**„Green Screens mobile solution increase employee productivity  
and reduce operational cost. “**

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## CASE STUDY SUMMARY

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### *Cost reduction*

Green Screens License prices ROI is within 1st year of usage with long term cost reduction.

2

### *Outsourcing*

Reduced cost maintenance cost, increased security and simplified workstations technical support.

3

### *Employee performance*

Advanced integration features and office document integrations helps to increase employee performance.

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Q

*How does it operate on low bandwidth?*

We use latest web and networking technologies that can handle 1000s' of concurrent connections with data transfers less than 2KB/req which gives the best performance even on low bandwidth networks.

Q

*What about technical and user support?*

For standard orders, we give ticket support. There are yearly subscription maintenance and support plans providing all cloud deployments, management and monitoring for you.

Q

*How many variations exist?*

There is support for small personal sessions to big clients, in public cloud environments with our management and support or in your own infrastructure.

Q

*Is it safe to use it online?*

We use many security techniques including auto sing-on feature with mandatory DES or SHA password exchange encryption between our servers and your hosts even if SSL is not used.

Q

*What platforms are supported?*

*For server side, all OS supporting Java 1.8. For client side, all OS supporting modern Web Browser technologies and Android Mobile or Tablet devices with installable mobile application.*

Q

*How to Become an Authorized Distributor?*

Reseller and distributors receive Partner ID which your clients can use to get discounts and you can get your commission. Please send us an email for more information.

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