The Global ePassport & eVisa Industry Report

Market Analysis and Forecasts 2009 to 2014

Comprehensive Market Data. Critical Insight. Targeted Revenue Forecasts

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by

ACUITY
MARKET INTELLIGENCE

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Report Overview

Scope: This report presents unique insight into the worldwide opportunity for the development of secure biometrically-enabled passport and visa documents. The current state of the market is evaluated in terms of how this market will likely evolve and where the most lucrative opportunities will be. This comprehensive report offers unbiased critical perspective and previously unpublished data and statistics on the ePassport and eVisa marketplace.

OBJECTIVE: Provide the basis for short-term, mid-range, and long-term strategic planning for technology and solution development, market investment, and phased adoption of ePassport and eVisa solutions.

AUDIENCE: Individuals responsible for strategic planning, business and market development, and sales related to ePassport and eVisa initiatives including vendors, integrators, investors, consultants, solution providers, and public sector staff responsible for developing and implementing ePassport and eVisa policies and programs.

METHODOLOGY: Analysis is drawn from significant market and technical developments, tests, pilots and deployments, public domain and private data sources, research and reports, surveys, and interviews with vendors, integrators, intermediaries, customers, privacy and civil liberties advocates, and other relevant technology and leading industry experts. Forecasts are derived from modeling market opportunities based on public domain and proprietary primary data and secondary data sources and are flexibly structured to account for known and predictive factors. Primary data determines known model data. These include data points like population, annual passports issued, program costs, and the number and type of visas issued. Models are adjusted to account for market conditions, current deployments, anticipated projects, and existing and planned infrastructure. Conservative assumptions for predictive factors such as technology pricing and anticipated adoption rates are introduced to determine forecasts.

KEY CONCLUSION: The ongoing development and production of secure ePassport and eVisa infrastructures will provide sustainable market opportunities as countries stabilize existing programs, continually incorporate new document and IT security features, update and replace aging equipment, and re-issue documents and reengineer processes in five to ten year cycles. By 2014, the deployment of a secure global border crossing infrastructure that leverages the proliferation of ePassports and eVisas will begin in earnest. With an emphasis on automated self-service verification of documents and identity and global data exchange, there will be increasing efforts to integrate global systems that process ePassports and eVisas so that any given automated solution can process any ePassport holder with or without am accompanying eVisa. In this way the imminent global travel and border control transformation will both be driven by and drive ePassport and eVisa market evolution.

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Preface

June 2010

EPassports and eVisas are poised to fundamentally change world travel by delivering on the promise to create a secure, consistent, and far more reliable global identification infrastructure. The markets for ePassports and eVisas (those that incorporate biometrics) are large, complex and difficult to quantify. These marketplaces include the enrollment, credentialing, and verification processes as well as solutions integration and the associated physical and logical technology and infrastructure required to deploy and leverage biometric passports and visas. Requirements and processes differ from country to country, employ various levels of automation, and may or may not be integrated with local and regionally based border control and facilitation systems.

Almost all of Europe has or will have ePassports by 2010, about 16 African countries have or will have them shortly, the United States is issuing ePassports, and Canada will by 2011. In addition, Japan, Korea, Singapore, Australia and New Zealand are also issuing ePassports. Altogether, at least 90 countries worldwide will be offering ePassports by the end of 2010 with 105 set to adopt by the end of 2014. With Western Europe's rapid current and planned adoption of ePassports and eVisas, emphasis has been shifting to Eastern Europe, the Middle East and Africa. Asia, with it's vast population and sustained economic growth will surpass Europe in number of ePassports issued by 2014.

The visa situation is not as clear. The UK, Sweden, Norway, France, Germany, Belgium, Luxembourg, Lithuania have biometric eVisa programs. Saudi Arabia is currently identifying an outsourcing partner for producing eVisas and many other nations are in various stages of defining, evaluating or beginning to deploy biometric eVisas. US-VISIT, while not purely an eVisa program, incorporates biometric visas as part of its overall approach to biometric-based border control and has become an international

model for border screening. Japan, South Korea and most recently Indonesia have adopted similar border screening programs but have yet to incorporate biometric visas into their processes.

The vendor ecosystem is equally large and complex and clear value chains have yet to be defined. Almost without exception, every vendor in the marketplace claims they have the "leading solution" for passports, visas, and/or border control, that their approach or methodology is the best, and that their key areas of focus are the most critical. Competition for every procurement is intense and in this environment, claims of "market leadership", particularly in terms of technology performance, are not verifiable, let alone useful in most cases. Demonstrated capability, high degrees of customer satisfaction, and a willingness to provide a platform for continuous innovation are critical in defining the market in favorable terms that suit a particular vendor or solution approach.

Regardless of adoption status on a country-by-country basis, ePassports and eVisas are becoming commonplace and these markets will provide sustainable revenue. While the cost and complexity of deployments will remain a significant obstacle for small and developing nations, investment and expertise provided by larger, wealthier states that have a vested interest in securing the global travel infrastructure will address this market gap. Even for those countries that have fully deployed programs, sustained revenues associated with lifecycle upgrades, updates, and security enhancements will be substantial. In addition, as more document and biometric readers and automated border control solutions are deployed, technology and process interoperability will become a reality and aggressive border system updates, upgrades, and replacements will become mainstream and provide more predictable, stable market dynamics that promise significant on-going opportunities.

Over the past few years, Acuity has had consistent, ongoing requests for insight into the dynamics and specific opportunities in this marketplace. The most sought after

research in this highly competitive marketplace has been concrete data on country specific adoption, opportunity sizing including credential volumes and issuing locations, planned procurements, actual and projected expenditures/revenues, and vendor positioning and deployments. To date, this type of data has existed only in bits and pieces, if at all, and prohibitively expensive and time consuming to aggregate.

The Global ePassport and eVisa Industry Report is Acuity's initial response to this market demand. This report is the first in a series that will provide the kind of hard data, "hype free" insight, meaningful analysis, and believable forecasts that provide critical support to the healthy evolution of the identification solution industry.

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Introduction

The Global ePassport and eVisa Industry Report is a data driven analysis of the state of the market for these two critical biometric based travel credentials. The report relies extensively on primary sourced data (which for the purposes of this report is defined as quantitative data obtained from sources directly tabulating or producing this data), and on secondary sourced data from trusted sources. The report then leverages model-derived forecasts to present a comprehensive view of these markets. Data acquired, modeled, and forecast includes the number of credentials issued, the distribution of biometrics enrollment and verification units and ePassport document readers, the value and projected growth of the markets, as well as key solution components and technology forecasts.

Definitions

For the purposes of this report, the following definitions apply:

EPassport: A combined paper and electronic travel document used to authenticate the identity of travelers that incorporates a contactless IC "smart" chip and biometrics, supports a combination of electronic and optical security features including watermarks, optically variable devices, and holograms, and securely stores the personally identifiable information printed on the document and enrolled biometric data.

EVisa: The electronic authorization and credentialing process for granting temporary access to a country for a specified purpose for a specified period that relies on biometrics to establish and confirm identity.

Methodology

A combination of primary sourced data and model based projected data was used to develop the forecasts and analysis included in this report. Primary data acquired directly through government agencies and well-credentialed non-governmental agencies

was presumed valid. Data acquired through sources with less qualified credentials or with strong motivation for particular outcomes was validated through additional sources and/or model based alternatives.

Data and Data Acquisition

Primary data used to complete the analysis and develop forecasts for this report includes passport and visa volumes, population levels and growth, number and location of border crossing points, diplomatic missions and consulates, domestic passport enrollment centers, existing technology pilots and deployments, as well as budgetary allocations and reported costs for relevant programs, and units and value of deployed technology.

Primary data was obtained directly from government agencies such as Departments of Immigration, Interior, State, Homeland Security, Foreign Ministries, and Audit and Accountability Offices. Additional data was sourced from non-governmental agencies tasked with providing domestic and global insight into population, immigration, passenger travel, border management, and government expenditures. Source materials include online data and databases, published statistics, policy papers, budgets, and program analyses, public statements, press releases, and direct consultation.

Finally, data was obtained through publicly available information from, statements by, and direct consultation with civil servants, consultants, vendors, integrators, analysts, and other third parties directly involved or with direct knowledge of specific relevant programs and deployments. In some cases, these third parties provided confirmation of the accuracy of data obtained from sources deemed to require validation.

Model Development

Models were developed to project specific data for countries where primary data was unavailable from government or non-government sources. The modeled projections use known data such as population, geographic size, and visitor arrivals as a basis for determining unknown values by referencing global statistics and those from similar

countries or regions where primary data is available. These projections are adjusted to account for regional indicators and variations such as political and social stability, levels of development, financial performance and stability, as well as other country or region specific indicators or influencers. Models are also adjusted to account for existing market conditions, current deployments, anticipated projects, and existing and planned infrastructure. Conservative assumptions for predictive factors such as technology pricing and anticipated adoption rates are introduced to determine forecasts.

Once primary sourced or projected data was available for all relevant countries, forecast models were designed to project unit volumes of passports, visas, and the related technologies covered in this report - biometrics, document readers, credentials, and smart chips for all countries adopting ePassports and eVisa. Revenue forecasts were then developed based on these complete primary sourced and projected data sets.

Benchmark Analysis

In the process of data acquisition, data projection, and market forecasts, certain consistent measures of deployment and adoption levels, service expectations and performance, and operational costs emerged. An assessment of these measures has been included in the report as a Benchmark Analysis that provide reference points for implementing new ePassport and eVisa programs or evaluating exiting ones.

Country Profiles

Each of the 105 countries that currently has or will have a biometric-based ePassport program in place by the end of 2014, that are issuing eVisas, or that simply use inspection equipment to verify ePassports, is profiled in a one page overview. These overviews provide details about ePassport and eVisa (if deployed or planned to be deployed by 2014) programs including the year the program was initiated, types of biometric(s) used, annual volumes and revenue, numbers in circulation, validity, next procurement, and number of domestic and off-shore issuing locations.

Market Analysis

Analysis is drawn from significant market and technical developments, tests, pilots and deployments, public domain and private data sources, research and reports, surveys, and interviews with vendors, integrators, intermediaries, customers, privacy and civil liberties advocates, and other relevant technology and leading industry experts. Critical data and key implications drawn from the primary data and forecasts are filtered through this knowledge base and presented from both a policy and planning perspective as well as from an opportunity assessment and market value perspective.

Forecasts

The final section of the report presents adoption and revenue forecast data globally, regionally, by solutions components and technologies. The forecasts have been developed through a rigorous process relying on the best available and or projected data. As with all market forecasts, the most significant indicator is the scale of the projections not the precise numbers. Furthermore, where assumptions were required to calculate forecasts, the underlying principal was to rely on conservative rather than aggressive estimates. In this way, ***the report offers a conservative market forecast baseline indicating the scale of opportunity expected over the next five years***.

Because of the complex nature of the ePassport and eVisa markets and the associated complexity involved in modeling data and forecasting revenues, *it is critical that the methodology, assumptions, and model notes in the forecast section be reviewed to gain relevant insight form the data.* Additional information is provided in the report in specific sections to reinforce the underlying assumptions where deemed necessary.

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Executive Summary

The ePassport and eVisa Marketplace

Ten years ago, the "ePassport" was a concept circulating among forward thinking individuals and small groups of industry, government and non-governmental agencies. In the wake of the 2001 terrorist attacks on the World Trade Center and subsequent transit attacks in Madrid and London, the "ePassport idea" transformed into a foundation for global security. Today, ePassports have not only become mainstream but have also created a sustainable multi-billion dollar industry poised to fundamentally change the global travel and border control infrastructure.

EVisas, as defined in this report as those that that rely on biometrics, are also emerging as critical travel credentials impacting the global travel and border control infrastructure, albeit somewhat more slowly. Initially implemented in the United States as part of the US-VISIT program to enhance border security, programs relying on biometrics screening of visa applicants have been introduced in Europe using models that are more focused on preventing visa shopping and other forms of fraud. Additional significant eVisa adoption is anticipated in the Middle East, Asia and the Pacific by 2014. While in Japan, South Korea and most recently Indonesia, US-VISIT like border screening processes have been introduced; they are not yet linked to biometrics visas.

Market for EPassports and EVisas to Exceed $10 Billion by 2014

Together ePassport and eVisa markets will reach more than $10 billion in annual revenue by the end of 2014 with an annual CAGR of 27.41%. The ePassport market accounts for more than 73% of these total revenues in 2009 dropping to just under 67% by 2014 with the eVisa market accounting for the remaining 27% increasing to 33% by 2014.

The ePassport market is much larger in terms of credentials issued as well with [redacted] million issued in 2009 growing to nearly [redacted] million annually by 2014. EVisa issuance grows from nearly [redacted] million to just over [redacted] million during the same period.

[redacted] dominates the markets in 2009 with more than [redacted] market share. However, this market dominance begins to shift to [redacted] by 2014, which grows from [redacted] to [redacted] over the 2009 to 2014 timeframe while [redacted] share drops to the same level at [redacted].

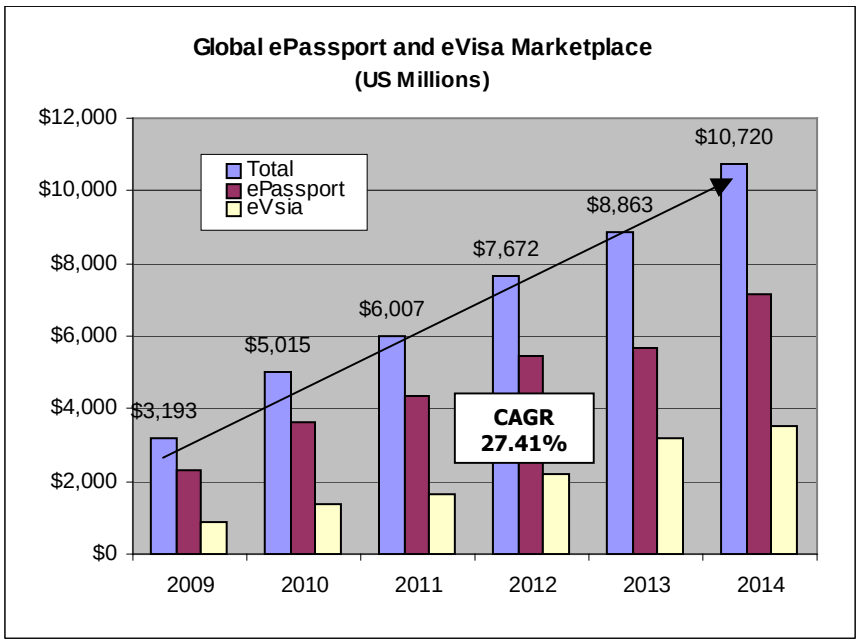

Figure 0-1: Global ePassport and eVisa Marketplace Revenue Chart

Worldwide EPassport Volume to Reach Near Full Adoption

The ePassport market, comprising hardware, software, and services related to the development and implementation of ePassport programs, will reach sustainable annual revenues of more than $7 billion by the end of 2014, with a CAGR of 25.16% from 2009 through 2014. [redacted] market dominance will diminish as overall market share drops from [redacted] to [redacted] during this period. At the same time, the [redacted] market will experience the most significant market share growth increasing from [redacted] to [redacted] of annual market revenues with an annual CAGR of nearly [redacted]

The strongest revenue growth will be in [redacted] where the CAGR will reach [redacted]. Annual revenues will increase from a modest $13 million in 2009 to nearly $450 million in 2014 as [redacted] market share expands from less than [redacted] to more than [redacted] of global revenues.

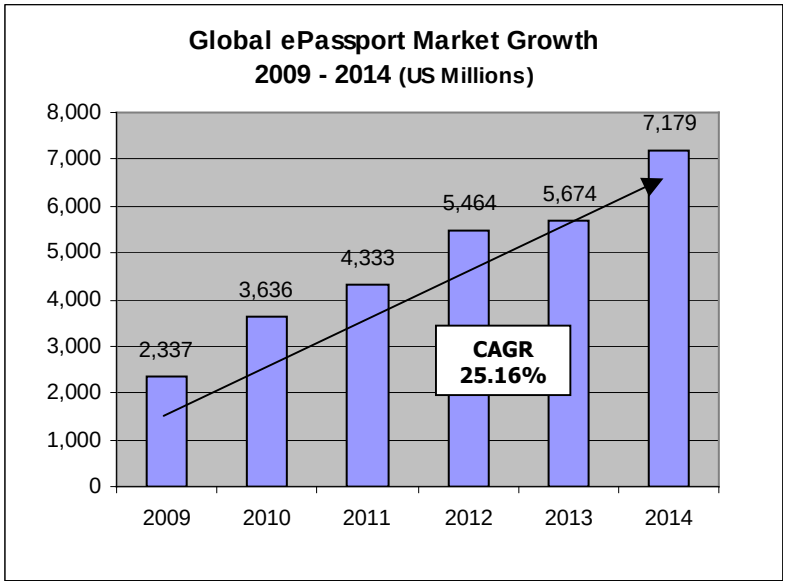

Figure 0-2: Global ePassport Market Growth Chart

The ePassport industry has grown from humble beginnings. In 1998, Malaysia introduced the very first ePassport (though pre-ICAO standards) followed by Belgium in 2004 when these countries together issued less than one million documents to their citizens. By the end of 2009, [redacted] countries were using ePassports. By the end of 2010, adoption will climb to [redacted] countries with [redacted] countries planning on converting their passports to ePassports by the end of 2014.

While the number of 2010 issuing countries represents just less than [redacted] of ICAO's 190-country membership, the total volume of [redacted] million projected annual passports produced by these countries accounts for [redacted] of the expected annual global volume. By the end of 2014, [redacted] ePassport issuing ICAO members will generate almost [redacted] million ePassports, representing nearly [redacted] of the annual worldwide passport volume and nearly [redacted] of the total passports in circulation at that time.

EPassport Adoption	2009	2010	2011	2012	2013	2014
Total Countries issuing ePassports	[redacted]					
Passports Issued (Thousands)						
EPassports Issued (Thousands)						
Percent ePassports of Passports Issued						

Figure 0-3: Global ePassport Unit Adoption Table

EVisa Market Growth Rate Stronger Than EPassport

The eVisa market, comprising hardware, software, and services related to the development and implementation of eVisa programs, is smaller but growing at a stronger CAGR of 33.37% over the 2009 to 2014 timeframe.

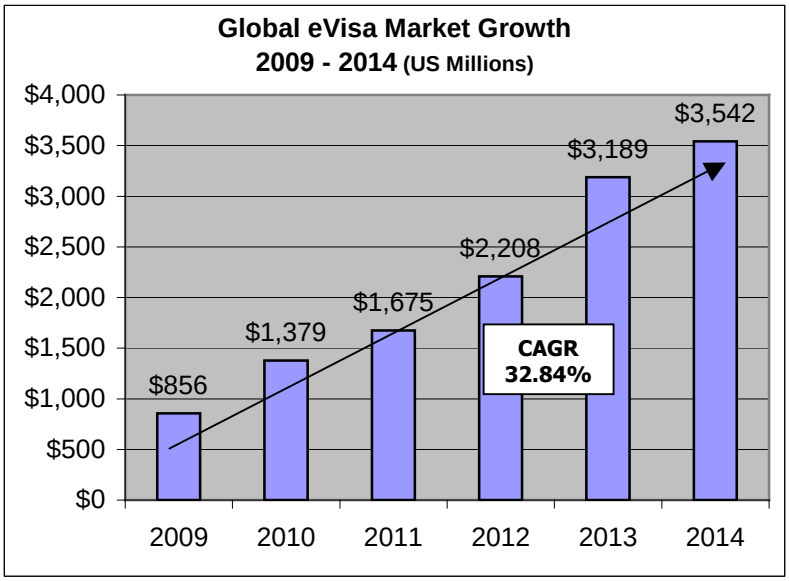

Figure 0-4: Global eVisa Market Growth Chart

In 2009, only [redacted] countries were issuing eVisas. By 2014 that number increases to [redacted] however, these [redacted] countries account for nearly 90% of the visas issued annually worldwide. The largest visa issuing countries include the [redacted] accounting for nearly [redacted] million or more than [redacted] all visas applied for annually.

EVisa Adoption	2009	2010	2011	2012	2013	2014
Counties Issuing eVisas	[redacted]					
Visas Applied per year						
EVisas Applied per year						

Figure 0-5: Global eVisa Unit Adoption Table

Much like the ePassport marketplace, [redacted] dominates. This dominance is being driven to a large extent by [redacted] However, [redacted] is poised to significantly increase market share as biometric visa programs are adopted and travel to this region increases along with strong economic development.

A number of biometric programs that focus on [redacted] populations at entry or exit have been introduced in the [redacted] These are not eVisa programs per se as defined in this report and are therefore not included in the analysis and forecast

Wide Divergence in Infrastructure Requirements

Successful ePassport and eVisa programs are far more complex than the production of secure, high-quality standards-based credentials. They are the result of well executed, multifaceted IT and physical infrastructure projects. In some countries, existing and well functioning credential infrastructures are in place and can be leveraged to implement the new programs. In others, almost no infrastructure exists and these programs require comprehensive end-to-end development. And then there are those that are somewhere in between.

Regardless of the start state, successful programs include a range of fundamental infrastructure components. Each component must be assessed then appropriately integrated, developed, or augmented as required to achieve program objectives

<u>Enrollment</u>

Capture of biometric data at enrollment for ePassports varies significantly by country and region. Countries that require fingerprints for their ePassports or eVisas all have some level of [redacted] which for most of these countries means simply [redacted] an IT infrastructure to manage

the data. Close to half of all ePassports issuing countries have deployed [redacted] at ePassport and eVisa application centers. The rest primarily rely on facial recognition based on photograph submission.

The inherent limitations of applicant photograph submission - the cost of quality control to meet ICAO specifications and the potential poor performance of facial recognition programs – will become significant roadblocks as countries [redacted] control systems. It is therefore, highly likely that as [redacted] become more prevalent in 2014 and beyond, so too will [redacted] enrollment solutions.

Data Management

Credential Data Management includes confirmation procedures such as verification, identification, de-duplication checking, and revocation checking before being saved to and managed by a centralized or local data center. Management of this identity information is a significant issue relative to chain of custody, data protection, and business models.

The size and scope of this component is highly dependent on the [redacted]. In countries with secure [redacted] support systems, the addition of [redacted] requires additional hardware and software as well as process reengineering but most often leverages [redacted] In countries with [redacted] infrastructure supporting [redacted] the introduction of ePassports and eVisas requires an [redacted]. However, even where [redacted] exists, the introduction of [redacted] creates new challenges.

Credentialing

The Credentialing process includes the design, development, production, and personalization of credentials. Traditionally passports have been significantly redesigned and redeveloped on regular cycles of five to ten years to incorporate new features and processes that enhance their security. This usually means procuring

production equipment or establishing a new service contract with a production vendor. Clearly, with ePassports the most significant change is the integration of a smart chip Individual countries vary in terms of how much of this production process is outsourced and how much is [redacted]. They also vary in terms of [redacted] selection. [redacted] process from a [redacted], some procure [redacted], [redacted] equipment independently, and some a combination of both. This allows governments to control their process to their advantage but helps contribute to the value-chain confusion in the marketplace.

Verification

Verification has different meanings as it relates to ePassports and eVisas. Currently, for ePassports, Verification primarily refers to [redacted] though eventually this will include [redacted]. Today even the use of [redacted] to verify ePassports at [redacted] is extremely limited (See section 3.2.2 [redacted]). With the proliferation of [redacted] in the 2013 to 2014 timeframe, verification of ePassport [redacted] they contain will begin to become mainstream.

Currently, use of [redacted] at border entry is, with few exceptions, still in trial phase. At [redacted] airports in [redacted], [redacted] airport and other border control points in [redacted], [redacted] airport in [redacted], [redacted] airport in Germany, and International airports in [redacted] and [redacted], travelers from designated origins can use [redacted] systems based on ePassports with [redacted] However, for most travelers, ePassports are still used in the context of a standard visual check that compares the facial image retrieved from the chip to the photograph in the passport to the individual presenting themselves to a border control agent.

Even systems in countries that [redacted] – regardless of visa status – to have their [redacted] images taken as part of the entry process, are not currently reading the fingerprint images stored on the ePassport for comparison. They are taking live images and checking them against their own watch list databases.

EVisa verification is another matter. For eVisas, verification means biometrics. In most cases the physical eVisa credential is a sticker that resides in a passport and only needs to be verified by the issuing country. While biometric enrollment at application – or even upon entry to a county - will increase over the next few years, there is still limited [redacted] applicants. The [redacted] have a fully deployed infrastructure to verify biometrics at entry.

Integration

The integration of these components into comprehensive solution remains a challenge. However, in the last year or two, integrators have become far more skilled at piecing systems together in systematic fashion rather than building customized solutions for every customer. It is still incredibly difficult to truly understand how well these interdependent components will function until the system is deployed. This means that iterative learning is required to develop true expertise in this area and subsequently best practices tend to remain somewhat proprietary, though informal industry communication and networking are ongoing. Many integrators maintain that this is a net positive as it allows them to continually advance their solutions with dynamic learnings rather then being bound to static standards or "best practices".

Biometrics at Enrolment and Entry Continues to Expand

Current ICAO requirements dictate the use of a facial biometric on all ePassports. [redacted] countries now require fingerprints as a secondary biometric with another [redacted] countries planning on requiring fingerprints by 2014. The EU Commission mandated use of this secondary biometric by June 2009 and to date, all EU 27 countries have or are in the process of complying. Finger as a secondary biometric is also increasingly being considered in [redacted] and [redacted], and will likely be adopted in the [redacted] as these countries move to ePassports.

Live Capture at Enrollment & Borders	2009	2010	2011	2012	2013	2014
Total Countries Issuing ePassports						
Total Countries with Biometric Live Capture						
Percent of ePassport Issuing Countries with Biometric Live Capture						

Figure 0-6: Global ePassport Biometrics Live Capture at Enrollment Adoption Unit Table

Capture of biometric data at enrollment varies significantly by country and region. Enrollment options range from [redacted] capture and validation of biometrics, digital signature and authentication documents at application. Countries that require fingerprints for their ePassports all [redacted] which for most of these countries means simply deploying [redacted] locations and providing an IT infrastructure to manage the data.

The inherent limitations of applicant photograph submission - the cost of quality control to meet ICAO specifications and the potential poor performance of facial recognition programs – will become significant roadblocks as countries adopt automated border control systems. It is therefore, highly likely that as [redacted] become more prevalent, so too will [redacted].

[redacted]

Currently, use of ePassport biometrics at border entry is, with few exceptions, still in trial phase. For most international travelers, ePassports are still used in the context of a standard visual check [redacted] the photograph in the passport to individuals presenting themselves to a border control agent.

The use of biometrics for eVisas is even less coherent. There are a number of approaches that have been implemented in different regions of the world.

The [redacted] are designed to bringing some coherence to this process. The [redacted] starts with

capturing biometric data from visa applicants, which is then stored in the [redacted] and retrieved at any [redacted] through a reference number or barcode on the visa sticker. [redacted] is part of the plan but the likelihood of broad based deployment of [redacted] is low. It is much more likely that as [redacted] adoption – those that do not require [redacted] just a valid ePassport - increase, these [redacted] will be equipped to [redacted].

Uptake of Passport Readers Dependent on Location and Use-Scenario

Most ePassport readers that have been deployed to date are used to verify documents at issuance. Approximately [redacted] systems are currently installed at passport enrollment locations, representing [redacted] of the total addressable market for these standalone ePassport readers.

EPassport Readers (standalone)	2009	2010	2011	2012	2013	2014
Total Addressable Market	[redacted]					
Total EPassport Readers Deployed						
Total Addressable Market Adoption						

Figure 0-7: Biometrics Standalone ePassport Reader Adoption Unit Table

EPassport readers deployed at border control posts account for less than [redacted] of this total addressable market. Limited growth is expected for [redacted] over the next [redacted] years, which is somewhat counterintuitive given the significant investment being made in the ePassport documents themselves. Even by 2014, when as discussed nearly [redacted] of the world's passports will be ePassports, only [redacted] will be [redacted] them.

Smart Chips and Biometrics Shift Industry Dynamics

Today's ePassport integrates two distinct security worlds into a single secure document. The conventional, highly secure and traditional paper-based identity document has fused with the digital, standards-driven, global world of IC chips. The form and content of the ePassport is truly a merger of two worlds: intricate designs and advanced forgery prevention techniques form a critical component of the document, and the IC chip,

Operating System, and digital signatures elevate the trust worthiness of the document to combat a new world of digital threats. These morphed digital biometric documents, have an additional advantage not found in conventional passports: it forms the underpinning for faster travel processing and more cost effective operations. This has shifted the power and influence in the ePassport market from traditional paper mills to vendors firmly based in the digital world.

Tipping Point for System-Wide Adoption Within Reach

By the end of 2012, global ePassport adoption will reach more than [redacted] of total circulation. For many countries, ePassport holders will represent the majority of travelers crossing their borders. EPassport use will then reach a critical tipping point. It will simply no longer make economic or operational sense not to leverage the capabilities of these documents. Traditional border control processes will be replaced by automated solutions on a global scale driving significant market growth and associated revenue. This will mean accelerated deployment of [redacted]

EGate Adoption	2009	2010	2011	2012	2013	2014
EGates deployed	[redacted]					
Cumulative eGates Deployed						

Figure 0-8: Global ePassport eGate Adoption Unit Table

A precondition is the global uptake of ICAO's Public Key Directory, which will act as a central broker to manage the exchange of nations' PKI certificates and certificate revocation lists. [redacted] are currently participating in the Directory and the majority of the remaining ePassport issuing countries will likely follow in the next 2 to 3 years.

EVisas will also achieve [redacted] adoption by 2012 with [redacted] counties issuing eVisas. By 2014, [redacted] countries will have adopted eVisas accounting for [redacted] of annual visas issued worldwide.

The ongoing development and production of a secure ePassport and eVisa infrastructures will provide sustainable market opportunities as countries stabilize existing programs, continually incorporate new document and IT security features, update and replace aging equipment, and re-issue documents and reengineer processes in five to ten year cycles. By 2014, the deployment of a secure global border-crossing infrastructure that leverages the proliferation of ePassports and eVisas will begin in earnest. With an emphasis on automated self-service verification of documents and identity and global data exchange, there will be increasing efforts to integrate global systems that process ePassports and eVisas so that any given automated solution can process any ePassport holder with or without am accompanying eVisa. In this way the imminent global travel and border control transformation will both be driven by and drive ePassport and eVisa market evolution.

Key Forecast Findings and Implications

- The ePassport and eVisa markets will [redacted] by 2014 due to ongoing expense of [redacted] and security enhancements.
- The next big phase of market development will be [redacted] This will proceed on a country-by-country basis with parallel development on a global interoperability infrastructure. Interoperability both from a technical standards perspective and a trusted status perspective that will allow countries to rely on processes for [redacted] protection.
- [redacted] will drive increased use of document and biometric verification at entry and exit. Widespread deployments of [redacted] to occur independently of the growth of these automated systems.
- Significant restructuring and associated investment in physical border control infrastructure will be required for widespread [redacted] adoption.

- Market adoption will reach critical tipping points for both ePassports and eVisas by [redacted] with [redacted] adoption of issued ePassports and [redacted] of eVisas issued annually. This will drive adoption of enhanced infrastructure including ABC for both ePassport and eVisa holders.
- Though the use of biometrics and document readers will be widespread, volumes will [redacted] while smart chipsets will maintain annual sales of more than [redacted] units.
- Widespread and accelerated adoption of [redacted] in the [redacted] timeframe will introduce a new series of issues to the industry in regards to standard [redacted], [redacted]. While today, these issues are not necessarily focal points of solution development; they will become critical deployment factors.
- Customer and user expectations for service, operational efficiency, and usability will continue to rise as early adaptors become experienced with various [redacted] worldwide and use expands to mainstream less sophisticated users.

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