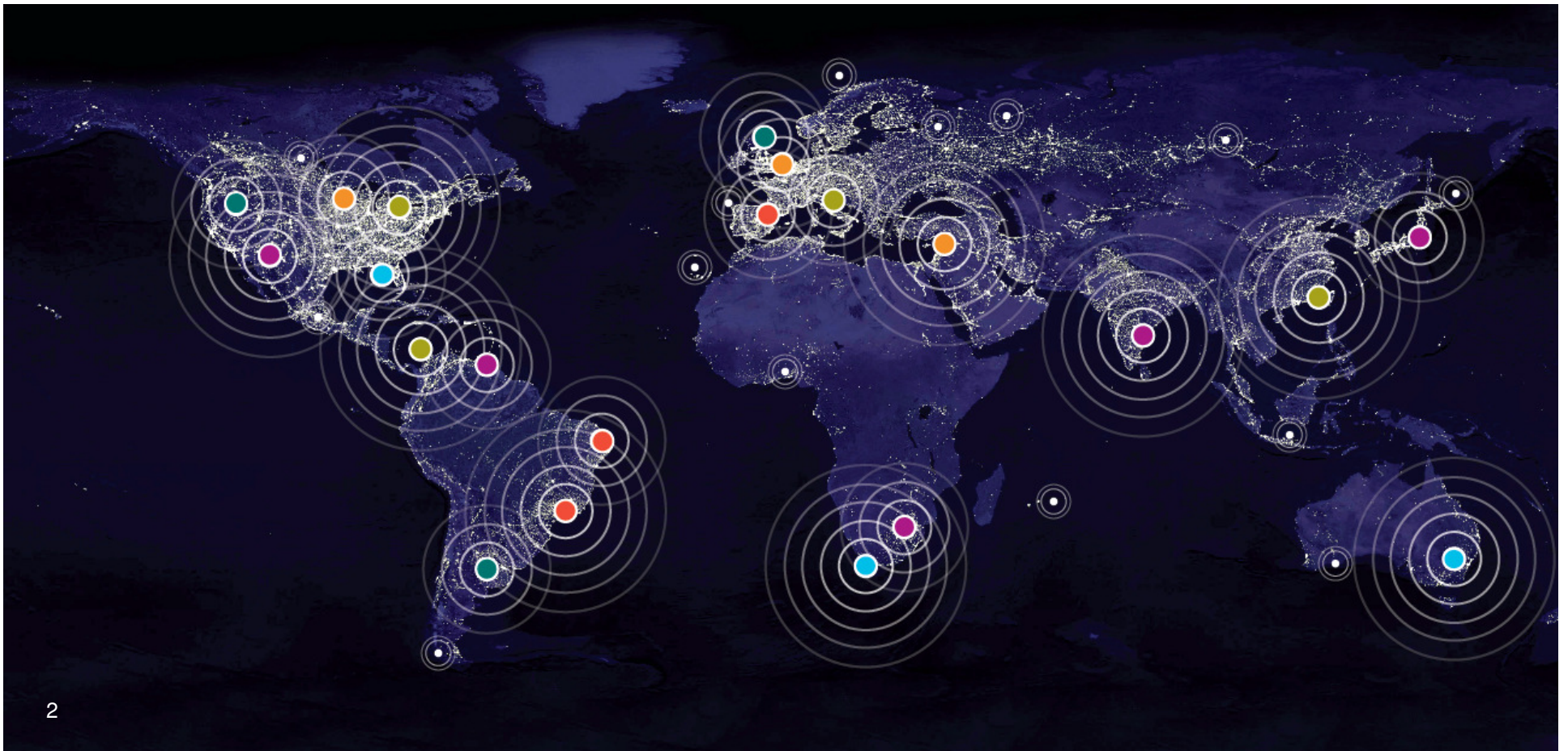**IBM Software**

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A Vision Of Smarter Cities – WebSphere ILOG Solutions For Prosperity And Sustainability

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A planet of smarter cities: In 2007, for the first time in history, the majority of the world's population—3.3 billion people—lived in cities. By 2050, city dwellers are expected to make up 70% of Earth's total population, or 6.4 billion people

Smarter cities are working to infuse intelligence into each of their core systems.

Government Services

Transportation

Energy and Utilities

Healthcare

Development

Education

Public Safety

Smarter Transportation: ILOG helps cities around the world reduce traffic, improve asset utilization, monitor networks in real time and increase safety & quality of transportation to citizens.

ILOG BRMS – fee calculation, road user charging, dynamic pricing, personalized notifications.
ILOG Optimization – resource planning & scheduling, route optimization & terminal management.
ILOG SCM – global supply chain design, sourcing strategies, transportation planning.
ILOG Visualization – advanced graphical interface for transportation networks monitoring

DYNAMIC TOLL PRICING
Enable dynamic toll system based on the flow of vehicles into and out of a city to reduce traffic.

OPTIMIZED ROUTE SCHEDULING
Reduce miles, meet service levels and assign the right fleet to the right stop at the right time.

PASSENGER RELATIONSHIP MANAGEMENT
Improve travelers' experience with personalized information delivered in real time

ADVANCED PASSENGER ANALYTICS
Screen each and every passenger, trigger alerts, improve security

INTEGRATED FARE MANAGEMENT
Simplify fare system for rail, bus and metro users.

OPTIMIZED RESOURCE ALLOCATION
Improve asset utilization, reduce planner cycles and optimize staff scheduling

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Smarter Transportation: Client transformations

The depot and line management system is the core of **Metro de Madrid**'s IT operations system. Using ILOG's advanced graphical displays, system operators can now manage in real time a large quantity and variety of data in a readable format, allowing them to better localize trains and respond to any unexpected situation or breakdown.

Singapore Mass Rapid Transit operates the first mass rapid transit system in Singapore and serves more than a million passengers daily. The multi-modal transport service provider dramatically improved employees productivity, resource utilization and customer service thanks to ILOG BRMS, Visualization and Optimization

Smarter Energy and Utilities: ILOG helps cities around the world optimize use of their limited resources, design more efficient operations and improve quality of air and water.

ILOG BRMS – permit eligibility & registration requirement checking, fee calculation & billing

ILOG Optimization – resource & network planning, hydro and thermal scheduling, optimal power flow and security-constrained

ILOG Visualization – advanced graphical interface for plants, equipment and networks monitoring.

FUEL SUPPLY, TRANSPORT, STORAGE
Improve fleet and facility utilization, bundle transport orders and optimize storage in space and time.

TECHNICIAN DISPATCHING
Optimize maintenance and staff deployment to reduce costs and improve service reliability.

PLANT MONITORING
Gain visibility into power plants operations and update plans in real time as conditions change

WATER MANAGEMENT
Maximize guarantee of supply, minimize production costs, evaluate impact of building new plants

AIR QUALITY MANAGEMENT
Regulate and monitor the air quality, issue permits to operate and construct facilities that can pollute air quality.

GRID PLANNING
Design reliable networks cost-effectively. Provides most competitive energy price and trade settlement in de-regulated marketplace

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Smarter Energy and Utilities: Client transformations

MVV Energie engaged IBM to design a framework for integrating devices and energy sources across the grid which "virtualizes" power generation sources. WebSphere ILOG BRMS manages business rules within the framework, reducing the amount of time, effort and cost required for development and maintenance.

DONG Energy in **Denmark** installed monitoring devices across their distribution network. WebSphere ILOG BRMS is used for outage notification and management. The increased insight into the grid's performance will potentially lessen outage times by up to 50% and reduce maintenance investments by up to 90%.

Smarter Healthcare: ILOG helps cities around the world streamline access of citizens to the right healthcare services, implement new regulations smoothly and connect hospitals, healthcare services providers and government agencies.

ILOG BRMS – eligibility determination, claim processing & underwriting, contract management, fraud

ILOG Optimization – optimal staff planning & scheduling, equipment allocation.

STREAMLINED ACCESS

Improve citizen service and streamline process of applying for social and healthcare services. Channel citizens to the proper health and human services program to facilitate service delivery. Reduce billing errors

PATIENT & CARE MONITORING

Detect changing patient conditions, deliver crisis values in a timely manner and improve responsiveness to critical patient conditions.

SHARED INFORMATION

Provide web-based access to community organizations, hospitals, healthcare services providers, and government services offices in various languages.

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Smarter Healthcare: Client transformations

State sponsored health-insurance in the US works with state governments to help process health-care applications for children and pregnant women. To clear applications more quickly, it offers advanced software solutions that include the Child Health Administration Management Program System (CHAMPS). Powered by WebSphere ILOG BRMS, CHAMPS has cut application processing time by 50%.

Care Systems empowers healthcare organizations to cut costs and optimize business practices through unique software systems and consulting services. Using IBM® ILOG Optimization, CareWare runs the scheduling process for the healthcare organization and help maximize workforce productivity and enhance staffing effectiveness in large healthcare enterprises.

Smarter Development: ILOG helps cities around the world be more attractive to new businesses, sustain existing ones and create opportunities for companies, individuals and capitals.

ILOG BRMS – permit eligibility & registration requirement checking and fee calculation.
ILOG Optimization resource & network planning, optimal power flow and security-constrained dispatch, contract and risk management, power market simulation.
ILOG Visualization advanced graphical interface for data analysis and simulation.
ILOG SCM global supply chain design, sourcing strategies, transportation planning, emission.

SMARTER TRAFFIC SYSTEMS

Connect the elements of the transportation system—streets, bridges, intersections, signs, signals and tolls—with a strong telecommunications backbone.

SMARTER HEALTHCARE SYSTEMS

Automate patient records, share patient data, conduct remote diagnostics and more with fast and robust telecommunications infrastructure and systems.

SMARTER FOOD SYSTEMS

Provide end-to-end visibility across the entire global supply chain to allow food companies to design, produce and deliver perishable goods more efficiently.

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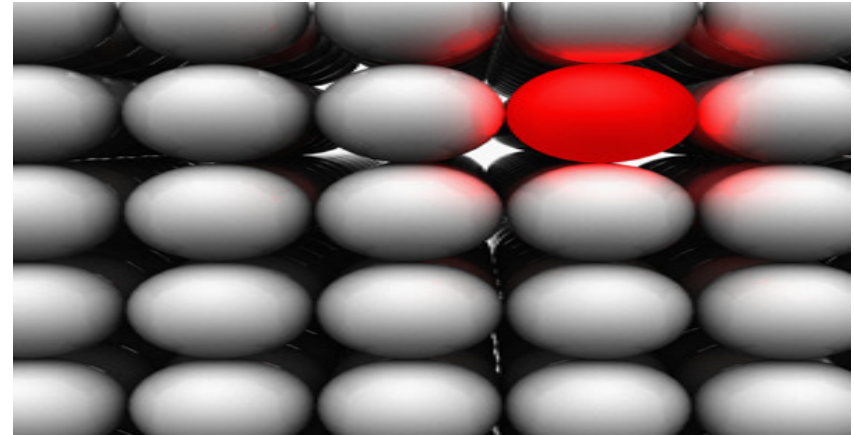**Impact2010**
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Smarter Development: Client transformations

Like all power utility managers and operators around the world, **Red Electrica de Espana** must constantly manage a daunting challenge: power must be consumed as it is generated because it cannot be stored. With ILOG Optimization, REE is now able to create an optimal unit commitment solution. Production costs decreased by 2%, carbon emissions by 2.5%, saving about €36M and 100,00 tons of carbon dioxide annually.

A **European University hospital** is able to develop earlier, quicker and more accurate diagnoses of rare diseases by integrating both medical expertise and data mining tools with the help of WebSphere ILOG BRMS and a statistical analysis tool implemented by IBM Global Business Services.

Smarter Education: ILOG helps cities and universities around the world make better use of their resources, streamline processes and support efforts of thousands of researchers.

ILOG Optimization – class and exam scheduling, timetabling, examination

ILOG Visualization – advanced graphical interface for resource planning

ILOG BRMS – scholarship eligibility determination, student ranking, teachers' criminal records checking, teachers certification processing.

RESOURCE SCHEDULING
Optimally assign courses, teaching venues and other resources.

SMART ADMINISTRATION
Incorporate data across education systems to optimize operations, improve services and lower costs.

INNOVATION AND RESEARCH
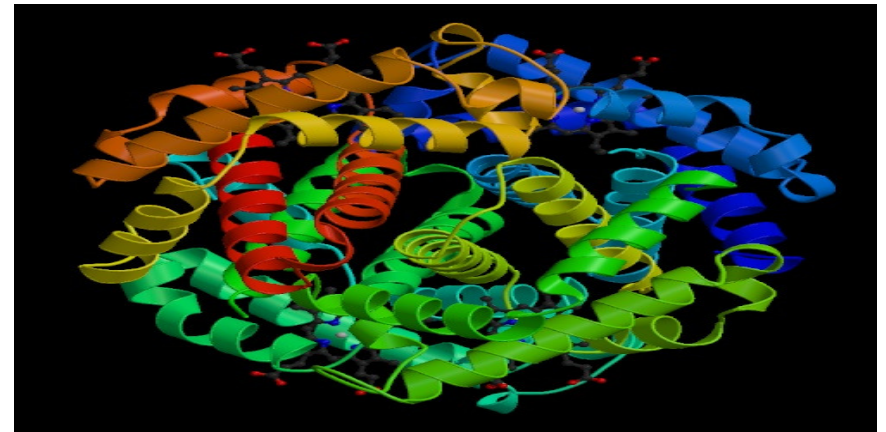Create smarter real-world industry applications.

Smarter Education: Client transformations

Texas Education Agency made it easier for teachers to apply for certifications and manage their application online, including looking at the result of their tests, completing payments and going through criminal background checking. As a result, schools and students have access to teachers faster.

Every year, once a year, hundreds of schools in Singapore design timetables for thousands of students and professors. This intense process takes about three weeks and is greatly streamlined by ILOG Optimization.

Business Rules are use to rank and post students to various schools when they graduate based on exam results and ECA merits

Smarter Public Safety: ILOG helps cities around the world   create safer environments citizens and communities.

ILOG Optimization – threat response, real-time resource allocation
ILOG Visualization – advanced graphical interface for surveillance systems
ILOG BRMS – event monitoring, threat detection, alerts management

EARLY WARNING SYSTEMS

Identify early on critical signs of threats, including epidemics, pollution or attacks and trigger effective response immediately.

EMERGENCY MANAGEMENT INTEGRATION

Connect police, fire departments, ambulance services and other first responders so all are instantly alerted when an emergency takes places.

SMART SURVEILLANCE SYSTEMS

Implement common user interface and continuously monitor information coming from digital cameras and other sources of information. Monitor urban areas and automatically alert authorities when a suspicious event occurs.

Smarter Public Safety: Client transformations

The **Ministry of Defense in Singapore** relies on ILOG Optimization and Visualization for efficient transport, logistics, ammunition systems

Several **Homeland Security Agencies** around the world rely on ILOG BRMS to detect threats in real time and deploy fast and highly secured action plans for Passenger and Cargo clearance .

The **City of Chicago** has developed a new Health Event Surveillance System (CHESS) which identify early on critical signs of epidemics.

Smarter Government Services: ILOG helps government agencies improve quality of services to citizens, reduce costs, and keep systems current with constant legislative & regulatory changes.

ILOG BRMS – decision making for eligibility determination, benefits calculations, claims processing

ILOG Optimization – resource management, planning and scheduling.

ILOG Visualization – interactive advanced data analysis.

COMPLIANCE AND TRANSPARENCY

Safely implement changes required by new regulations, while accessing complete audit reports.

BETTER SERVICES TO CITIZENS

Simplify and streamline access to services & benefits with personalized web-based access and error-free benefit calculations

SAFER ENVIRONMENT

Optimize dynamic risk management across geographic areas, services, agencies and levels of government. Fight fraud and enhance threat detection.

SMARTER PROCESSES

Centralize business policies and reuse decisions across programs & agencies for higher visibility, better consistency and lower costs.
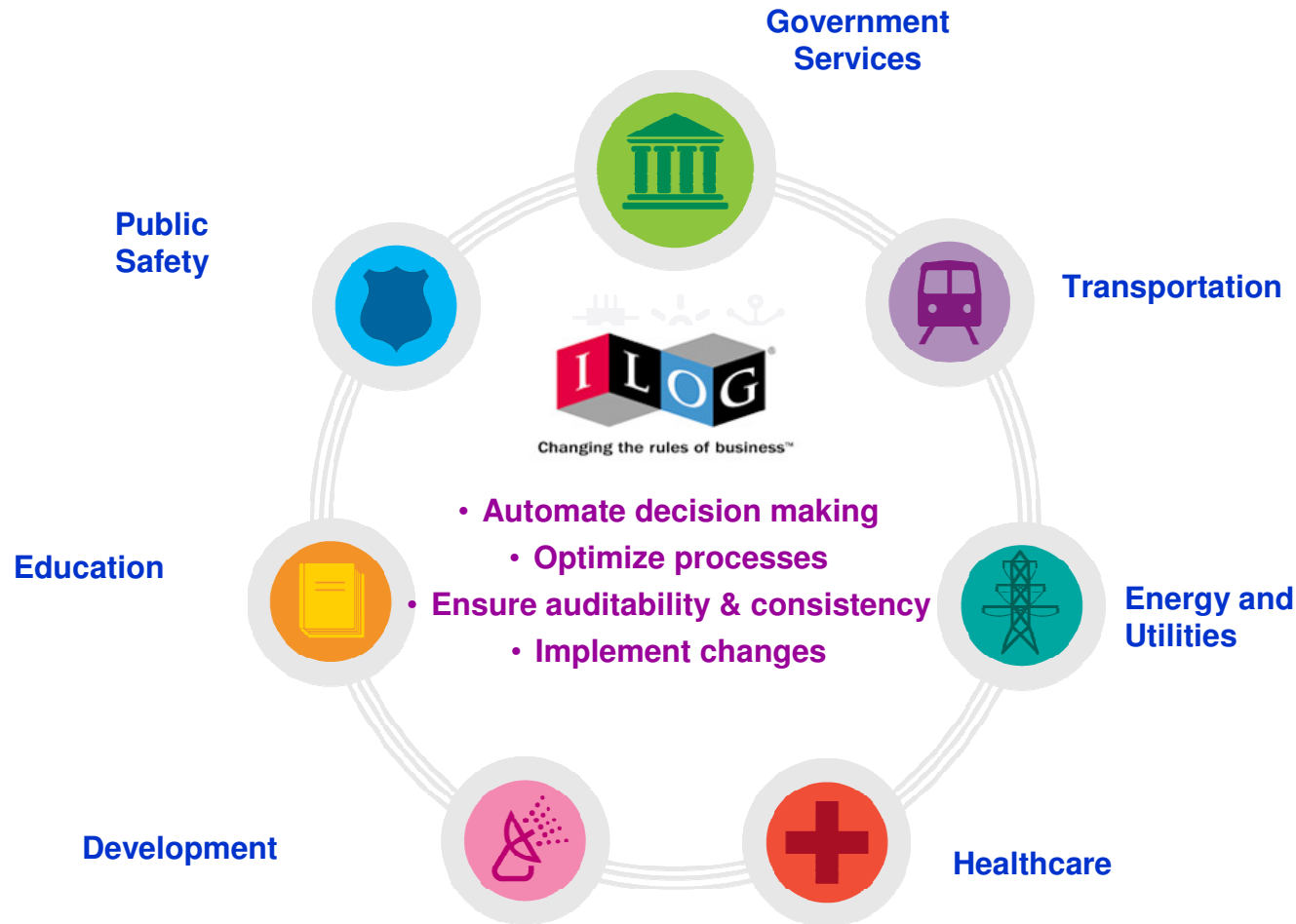
Smarter Government Services: Client transformations

By choosing an intelligent ship planning module developed using IBM® ILOG Constraint Programming (CP), **PSA Terminals** can now produce a loading plan in less than 30 minutes. Optimization technology allows the port to balance customer service goals and improve staff productivity, while taking into account the company's resources and capabilities.
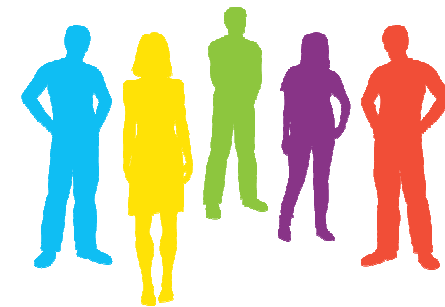
Minnesota Housing reduced loan application and confirmation time from about 40 days to 15 minutes. About 90,000 new households per year can now conveniently access their application online, significantly reducing paper and costs related to the loan application process.
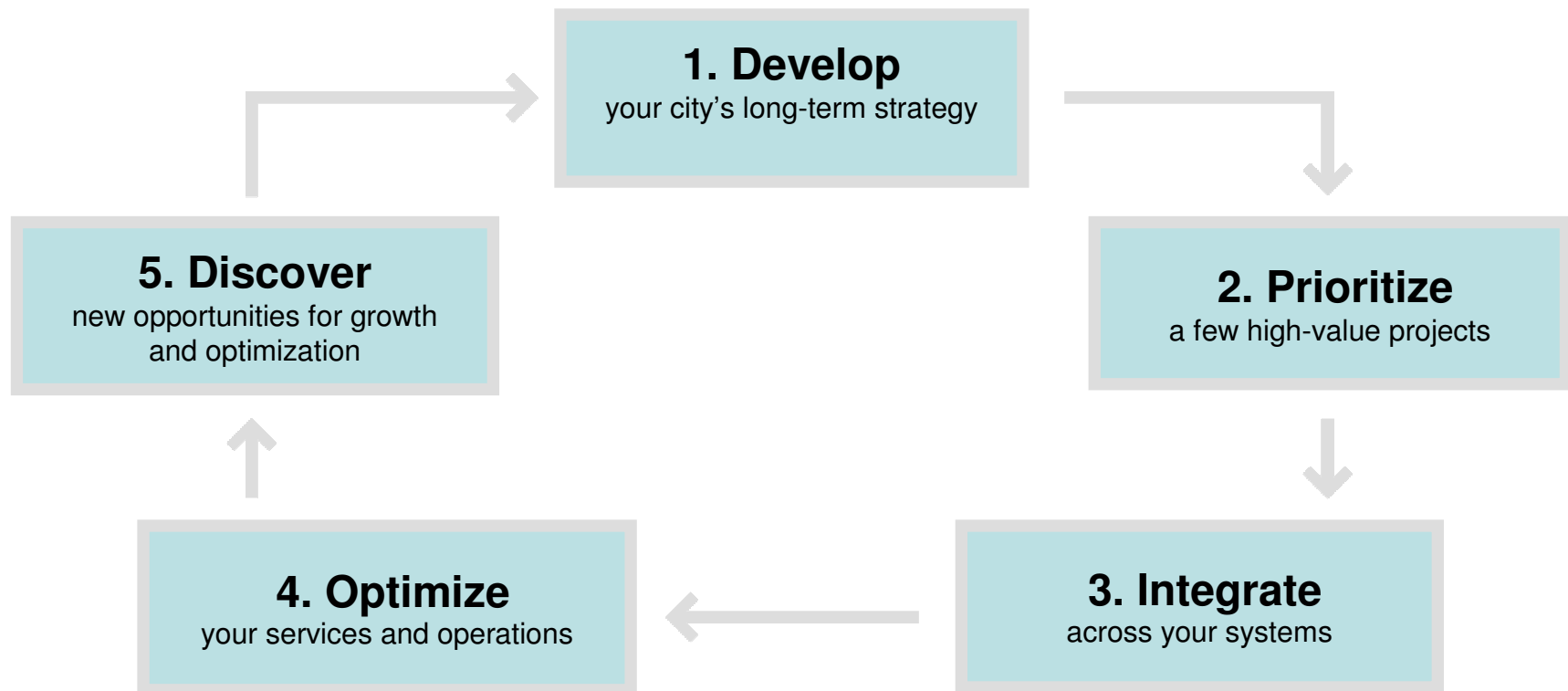
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ILOG helps automate critical decisions, have better visibility into processes and create flexible systems that adapt to change easily

Government Services

Public Safety

Transportation

Education

Energy and Utilities

Development

Healthcare

- Automate decision making
- Optimize processes
- Ensure auditability & consistency
- Implement changes

ILOG®

Changing the rules of business™

Smarter cities focus on the economic health and welfare of citizens and businesses—providing needed services, creating an economically sound environment and improving the quality of life for all.

Smarter cities roadmap: Starting with your goals and a long-term strategy, select high-value projects that can be managed carefully to produce visible results.

1. Develop
your city's long-term strategy

2. Prioritize
a few high-value projects

3. Integrate
across your systems

4. Optimize
your services and operations

5. Discover
new opportunities for growth and optimization
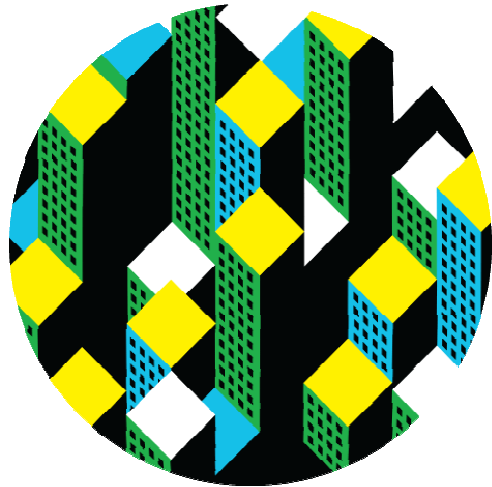
The New Leadership Requirements:

Collaboration

Standards

Openness and Innovation

These three elements are key to your city's long-term strategy and road-map to success.

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Building a Smarter Planet

The key precondition for
REAL CHANGE
now exists.

A period of discontinuity is a period of
OPPORTUNITY
for those with courage and vision.

There will be
WINNERS,
and there will be losers.

What will you do?

IBM ILOG Solutions Portfolio for Cities

Intelligent Transportation

- Dynamic toll pricing
- Optimized route scheduling
- Passenger relationship management
- Advanced passenger analytics
- Integrated fare management
- Optimized resource allocation

Energy & Utilities

- Fuel supply, transport and storage
- Crew scheduling
- Real time monitoring
- Water Management
- Air quality management
- Grid planning

Healthcare

- Streamlined access
- Compliance
- Shared information

Development

- Smarter healthcare systems
- Smarter traffic systems
- Smarter food systems

Education

- Resource scheduling
- Smart Administration
- Innovation and Research

Public Safety

- Early warning systems
- Emergency management integration
- Smart surveillance systems

Government Services

- Compliance and transparency
- Better services to citizens
- Safer environment
- Smarter processes

Flash Video

धन्यवाद

Hindi

謝謝你

Traditional
Chinese

cảm ơn bạn

Vietnamese

спасибо

Russian

Gracias

Spanish

Thank You

English

شكرا لك

Arabic

Obrigado

Brazilian Portuguese

Grazie

Italian

Merci

French

Danke

German

谢谢你

Simplified
Chinese

ありがとうございました

Japanese

고맙습니다

Korean

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