Principles of Application Development for Revamping

National Scholarship Portal

eHospital

Need for Revamping

1. Multiple applications of similar nature across states
2. Duplication of development & maintenance efforts
3. Lack of holistic picture
4. Lack of Standardization
5. Lack of uniform database schema
6. Lack of integration & interoperability (across applications, common components)
7. Limited scoping at the time of conceptualization
8. Not easily scalable & configurable, difficult to add new features
9. Technology upgrade (Cloud, Data Analytics, Web enabled etc)

Key Revamping Principles

1. Multi-tenant Common Application Software
2. Centrally hosted as Software as a Service (SaaS) on MeghRaj
3. Configurable (UI, Business logic, workflow etc)
4. Scalable on demand
5. Standardization of core elements of a software
6. Open API for sharing data & interoperability
7. Multi-device, multi-lingual support
8. Seamless integration with Gateways (payment, SMS, service GWs , Aadhar etc)

For details kindly see: Application Development & Re-Engineering Guidelines
http://deity.gov.in/sites/upload_files/dit/files/Application_Development_Re-Engineering_Guidelines.pdf

Application Development & Re-engineering Guidelines

- **Key Focus Areas**
  - Application Design & Standards Adoption
    - Loose Coupling, Service Abstraction, Discoverability, Transparency & Granularity
    - Industry standards such as IEEE, CMMI, ISO, Meta-Data Standards etc.
  - Solution Engineering (including Configurable & Customizable Components)
    - Configurable - Meta-data, Screen Labels, Alerts & Messages & Reports
    - Configurable – Workflows (Engine), Business Rules (Rule Set) & Dashboards
    - Customizable - Modular development & integration within application
  - Mobile Enablement

    Mean through which applications can be engineered to provide services through mobile enablement:
    - Accessing application through a mobile device
    - Accessing mobile version of the application through a mobie device (m.website)
    - Accessing a mobile application through a mobile device

Application Development & Re-engineering Guidelines

- **Key Focus Areas**
  - Interoperability & Integration Capabilities (including Multilingual)
    - Asynchronous, Synchronous & Batch Modes
    - Web Services, APIs, Gateways, UNICODE complaint, self learning data dictionaries
    - Support middleware (messaging queues), open standards
  - Documentation & Certification
    - Project Artefacts – FRS, SRS, RTM, User Manual etc.
    - Functional Testing, Performance Testing & Security Testing
  - Application Sizing & Scalability
    - Ability to scale up to meet increasing load
    - Bandwidth throttled environments
    - Low technical & infrastructure resource consumption

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Application Development & Re-engineering Guidelines

- **Application Assessment Checklist**
  - 25 questions designed on the focus areas
  - Weighted Average Method used for the analysis (Weight x Rating = Score)
  - Weights given to each question on scale of 1 to 5
    - Where 1 - desirable feature & 5 – critical product feature
  - Rating given to each question on a scale of 1 to 6
    - 1 – feature cannot be incorporated
    - 2 - >50% ODE
    - 3 – 30%-50% ODE
    - 4 – 10%-29% ODE
    - 5 - <10% ODE
    - 6 – feature exists

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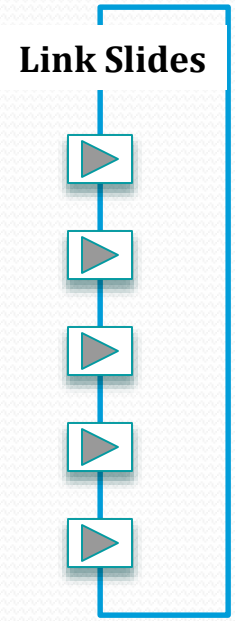
Cloud Enablement of Applications

- **Cloud Enablement of Applications**
  - REHOST on Infrastructure as a Service (IaaS)
  - REFACTOR for Platform as a Service (PaaS)
  - REVISE for IaaS or PaaS
  - REBUILD for PaaS
  - REPLACE with Software as a Service (SaaS)

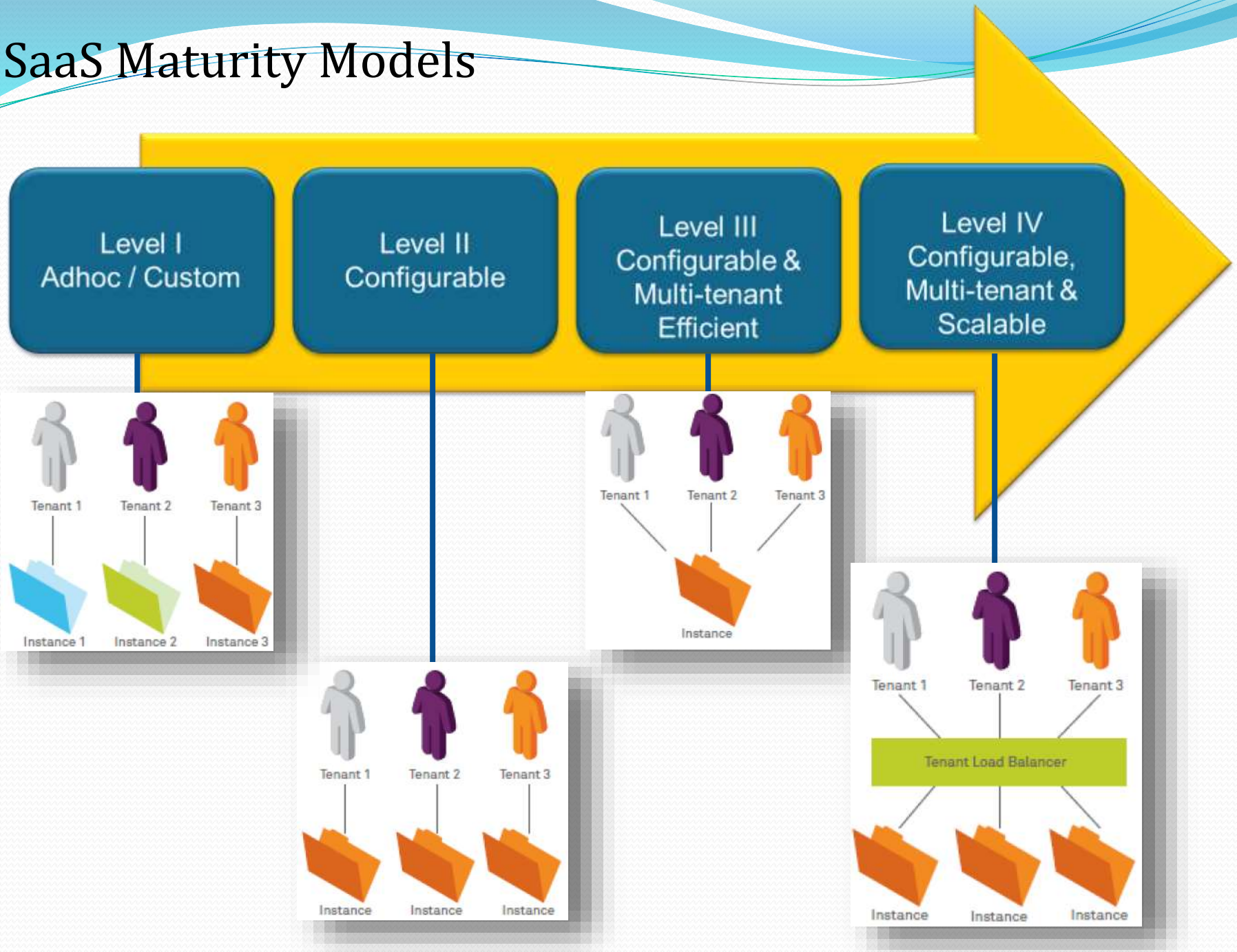


- **Objective should be to develop applications on Software as a Service**
  - Should have all the characteristics of SaaS
  - Should be developed basis SaaS Maturity Models
  - Should be developed on Multi-Tenant, Configurable & Scalable Architecture

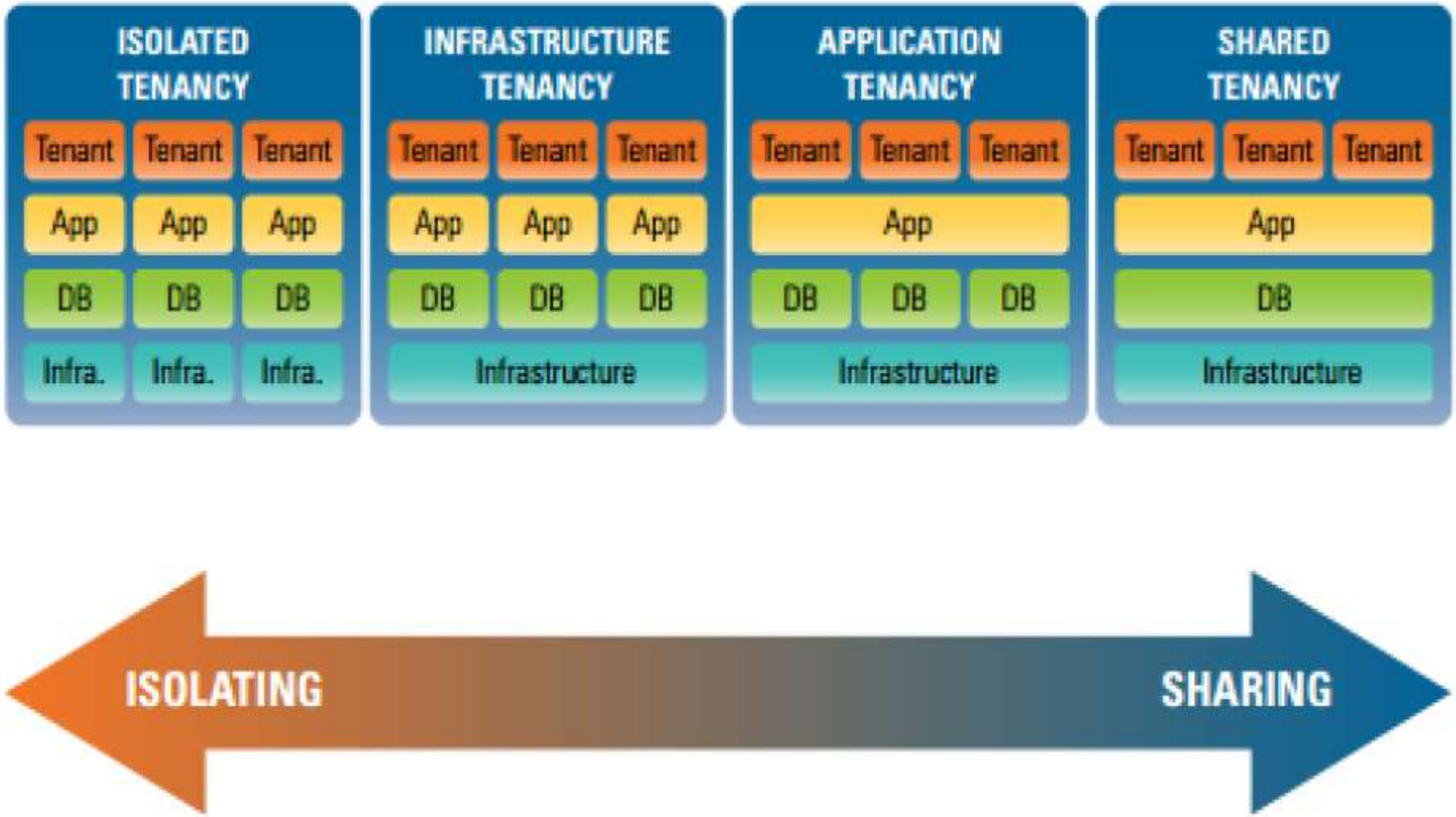
Characteristics of Software as a Service

- Should support Multi-Tenancy
- Should have certain level of Self – Service – Signup
- Should be Scalable in nature
- Should be Stateless in nature
- Should support mechanisms to Measure Service
- Should support unique User Identification & Authentication mechanism
- Should support Configurability
- Should have application & tenant, monitoring & management mechanism

SaaS Maturity Models



Multi-Tenant Architecture Design Options



Revamping MMPs/eGov Applications

Selected / Proposed MMPs and other eGov Applications:

1. National Scholarship Portal
2. eHospital
3. Transport
4. PDS
5. ePrisons
6. Project Proposal & Submission Monitoring System
7. Permit Online
8. Check Post Online
9. Pay Online
10. eTreasuries
11. ePensions
12. eCourts (Case Information System)
13. Call Details Record Analysis

National Scholarships Portal

Application Brief

- National Scholarships Portal- single platform to process and disburse all scholarship schemes administered by central ministries
- Main objective – An end to end process from registration to disbursement of scholarship for multiple schemes with configurable workflows.
- 6 central Ministries / departments (Social Justice & Empowerment, Department of school education, Department of disability, Department of higher education, Minority Affairs and Tribal Affairs) to be on-boarded
- Application successfully launched for Ministry of Minority Affairs on 01st May '15. ON-boarding of rest of the ministries in progress.
- Application is accessible at http://scholarships.gov.in/login.do

Features added under Revamping

•Single application for all schemes and unique application no. for entire duration of studies
•Dynamic Scheme/Application form configuration
•Configurable Work flows
•Configurable State Masters
•Ministry/State/UT wise Content Management System (CMS)
•Configurable Fund Release work flow

National Scholarships Portal Workflow

Students	• Apply online; scan & upload documents
Institutes	• Verify Applications and forwards to the verification officers
Verification and Scrutiny	• Verification of documents
Review and Approval	• Scrutiny & Sanctions scholarships online
PFMS	• Sanction and payment to beneficiaries
Banks	• Transfer funds to accounts of students and colleges

National Scholarships Portal

A A A+ A A- Screen Reader

National Scholarships Portal

Helpline Numbers:040-23120500 (501 /502 /503 /504 /505)(Timings:10:30 AM to 05:00 PM on all

Englis

Home | About | Student Login | Services | Reports | FAQs | Complaints/Feedback

Ministries/Departments

- Ministry of Minority Affairs
- Ministry of Tribal Affairs
- Ministry of Social Justice and

National Scholarships Portal is open for registrations

Register HERE

S.No	Department	Scheme	Status

Official Login

Ministry/State/Institution

Password

eHospital

Application Brief

- e-Hospital - Hospital Management System is a workflow based ICT solution for Hospitals
- This is generic software which covers major functional areas like patient care, laboratory services, work flow based document/information exchange, human resource and medical records management of a Hospital.
- It is a patient-centric system rather than a series of add-ons to a financial system.
- e-Hospital Suite is a web based solution, developed by NIC and implemented in 45 hospitals across the country
- e-Hospital conforms to HL7 Standards, for managing healthcare service delivery in public hospitals

eHospital: Features added under revamping

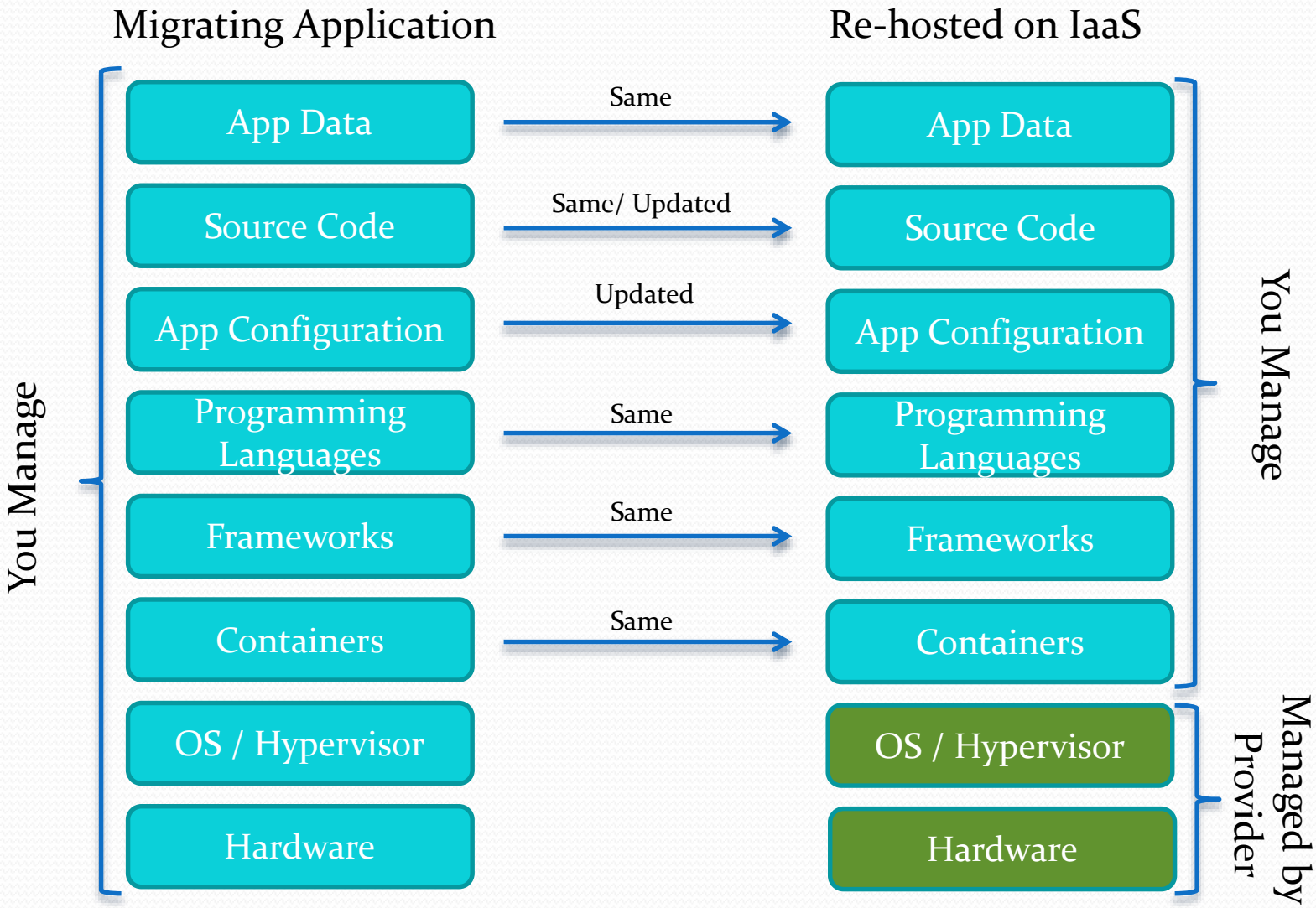
- Application hosted centrally hosted at SDC for all the 3 hospitals of Karnataka
- NIC Tripura has recently developed an OPD Registration System (ORS) to book an appointment with a doctor in the hospital of their choice.
- ORS is accessible over internet at http://orf.gov.in and is hosted National Cloud.
- ORS is Aadhaar based online registration and appointment system integrated with eHospital application.
- ORS is integrated with PayGov enabling citizens to make online payment for registration
- ORS is currently implemented in AIIMS hospital. Implementation in 10 identified hospitals in progress
- Availability of following citizen centric services in eHospital application in progress:
  - Online Clinical Diagnostic Reports
  - Stock availability in Blood Banks
  - Integration of PayGov to facilitate payment for services/diagnostic tests

Steps for Adoption of applications under revamping

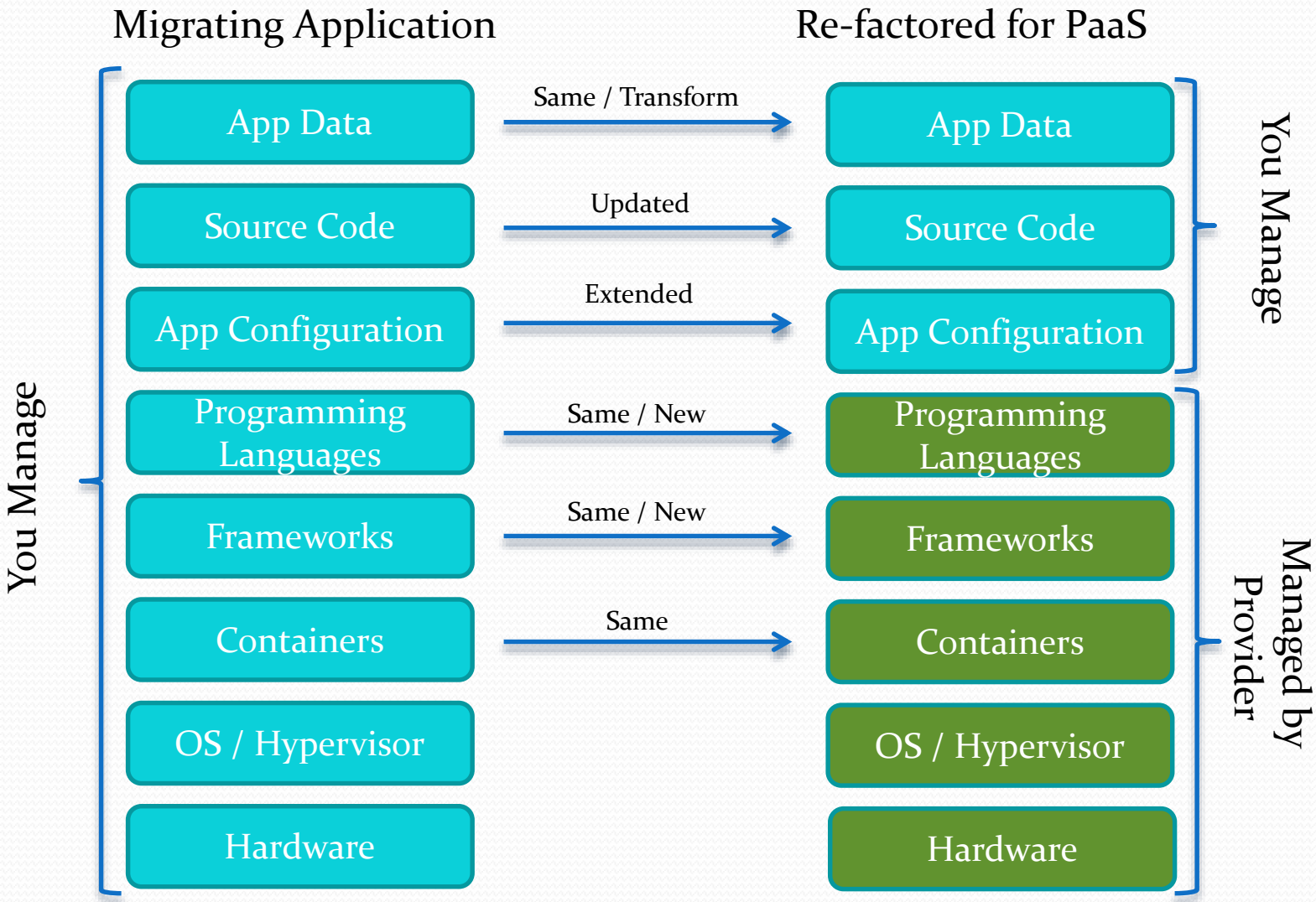
- Identification of interested departments in the state
- Appointment of Nodal Officers
- Configuration of Work Flows by states/deptts, as per their requirement.
- Identification of any localization requirement
- Liaising with implementing agency for the implementation
- Conducting awareness sessions

Thank You

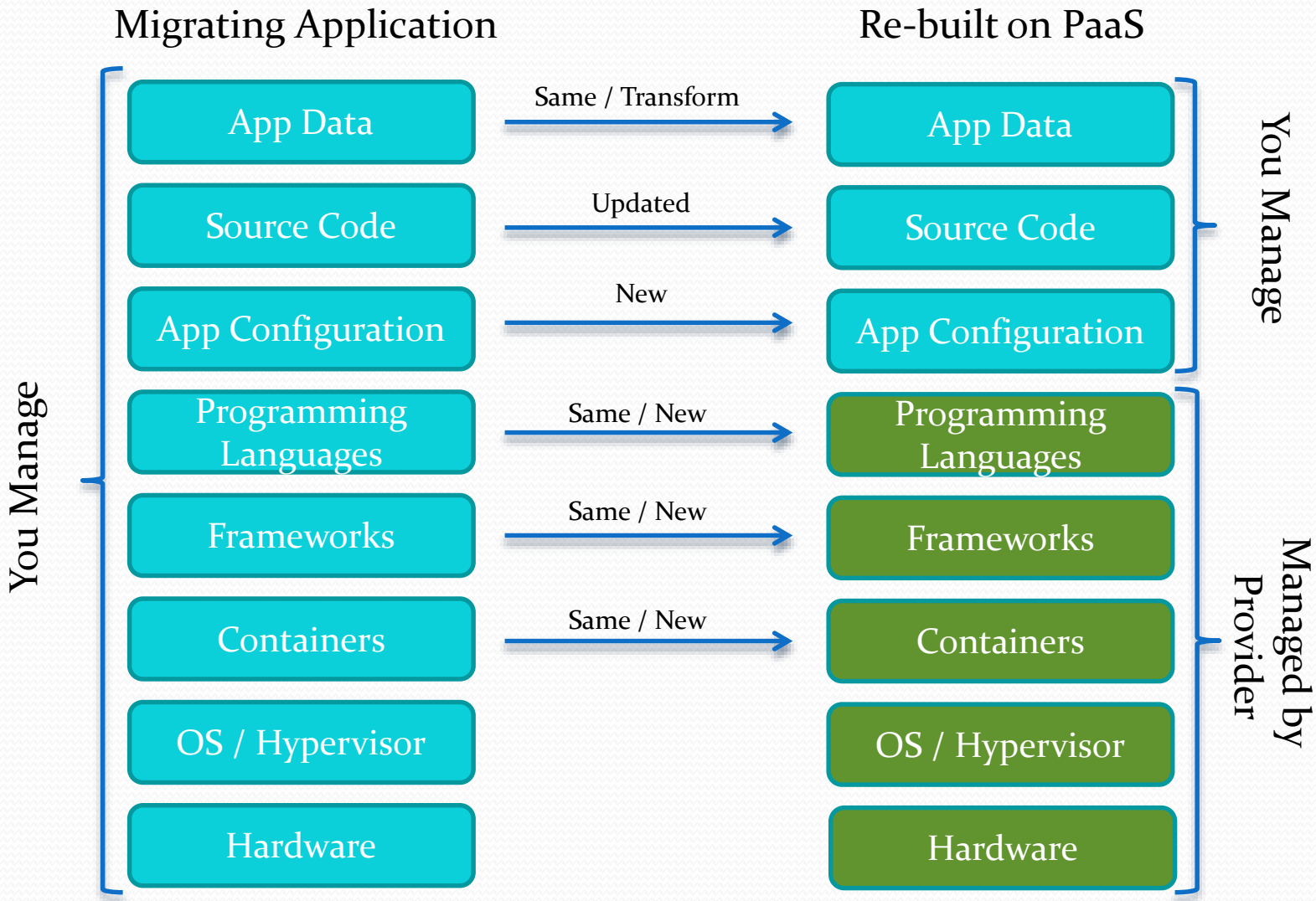
REHOST on Infrastructure as a Service (IaaS)



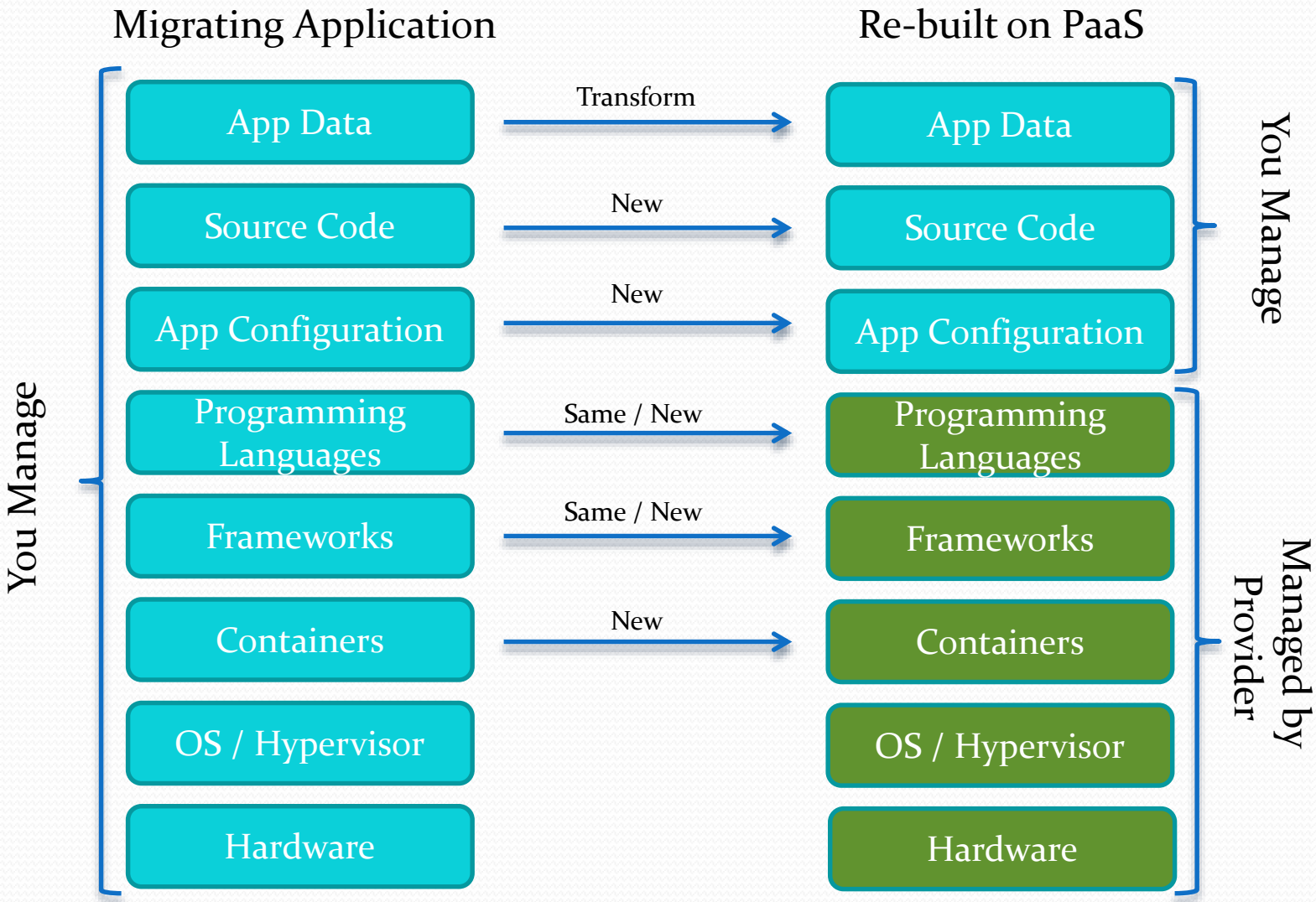
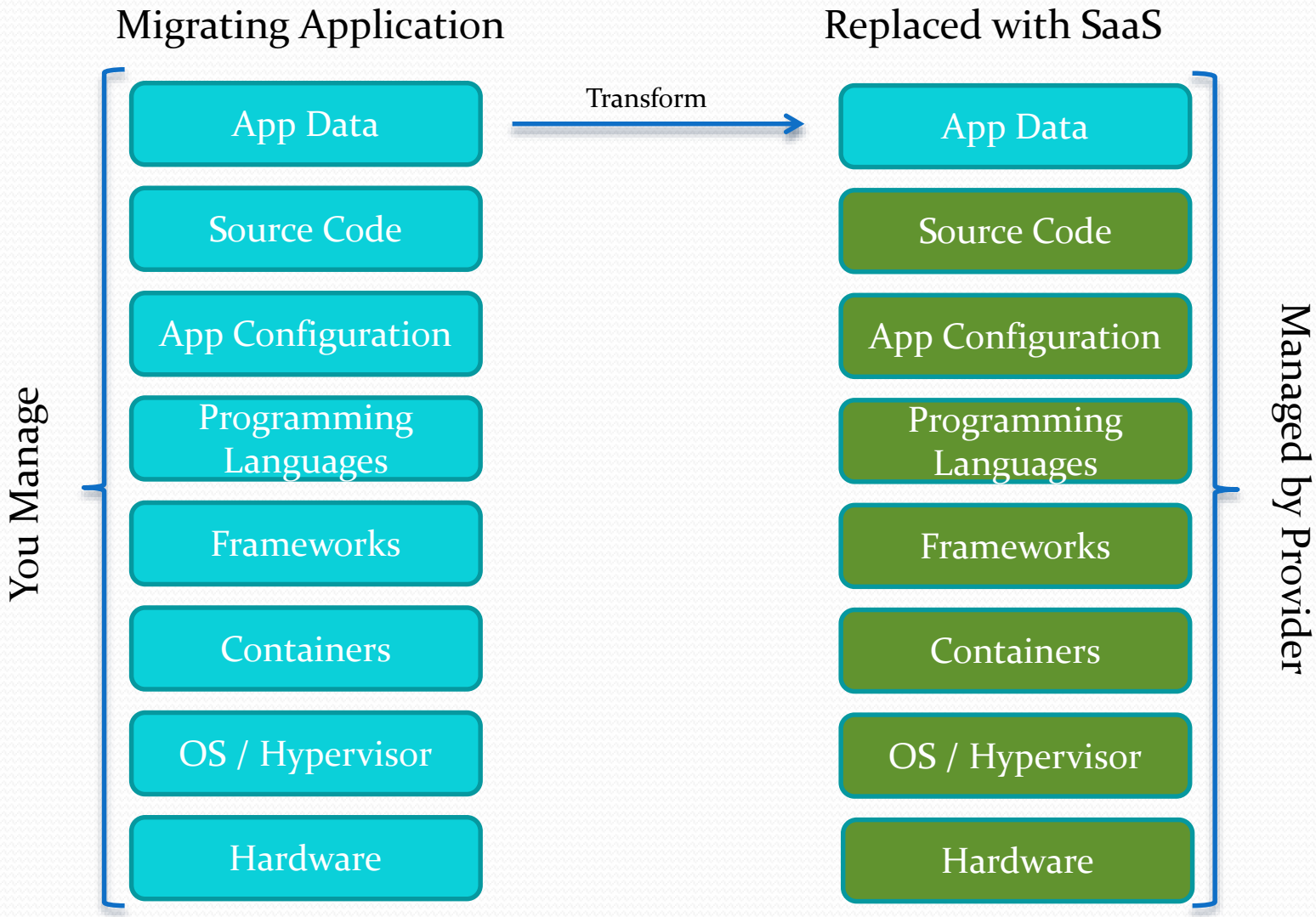
REFACTOR for Platform as a Service (PaaS)



REVISE for IaaS or PaaS



REBUILD for PaaS



REPLACE with Software as a Service (SaaS)