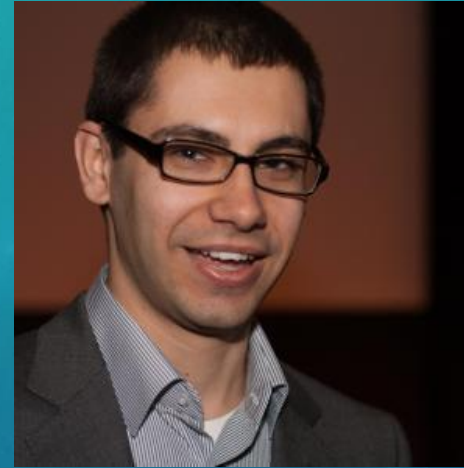


# CLOUD AND ENTERPRISE INTEGRATION MADE EASY WITH LOGIC APPS



VASSIL STOITSEV  
CAPGEMINI

# VASSIL STOITSEV

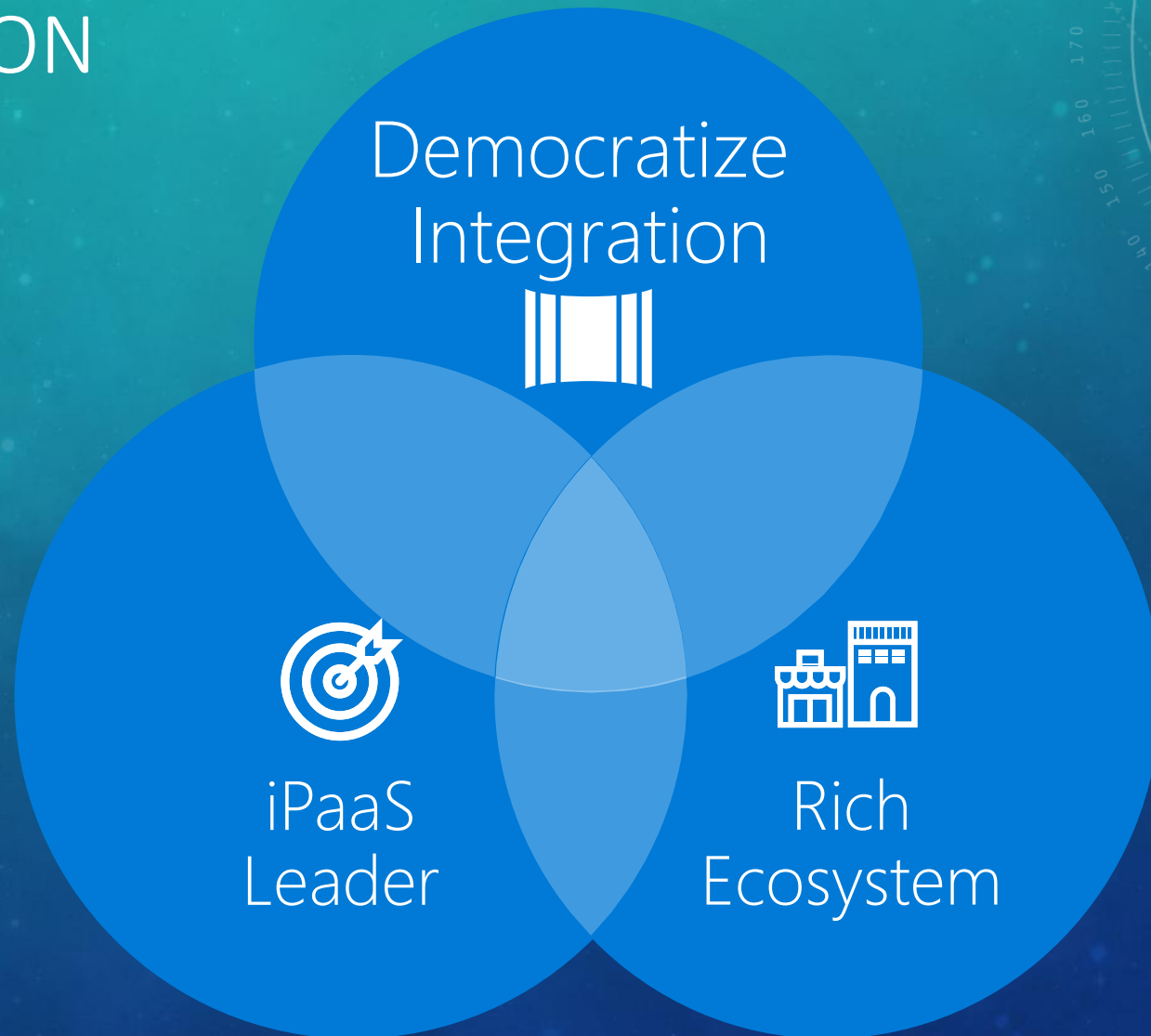


- Architect / Analyst / Developer
- Dynamics CRM & Azure
- Racketlon player
- stoitsev [at] live [dot] com
- <https://nl.linkedin.com/in/stoitsev>
- @vassilstoitsev

# INTRODUCTION

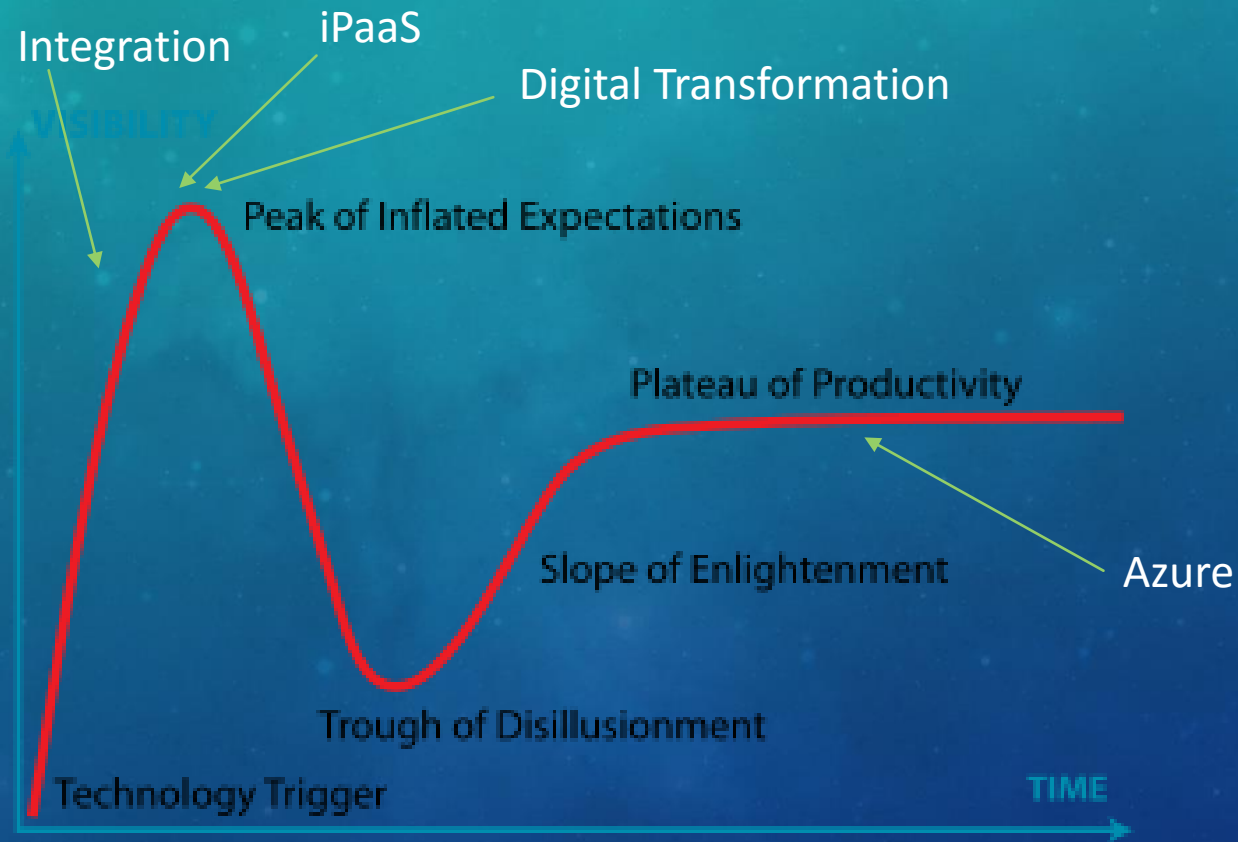


# MICROSOFT'S VISION





# IPAAS (INTEGRATION PLATFORM AS A SERVICE)



Hype Cycle Model from Gartner

# LOGIC APPS 101



# WHAT ARE LOGIC APPS?

- Workflow/process-oriented service to connect your \*-ends with \*-ends
- Apply Business Logic in the process
- Visual or JSON definition
- Monitor what is happening and retry if needed
- Many out-of-the-box connectors
- GA since a month or so

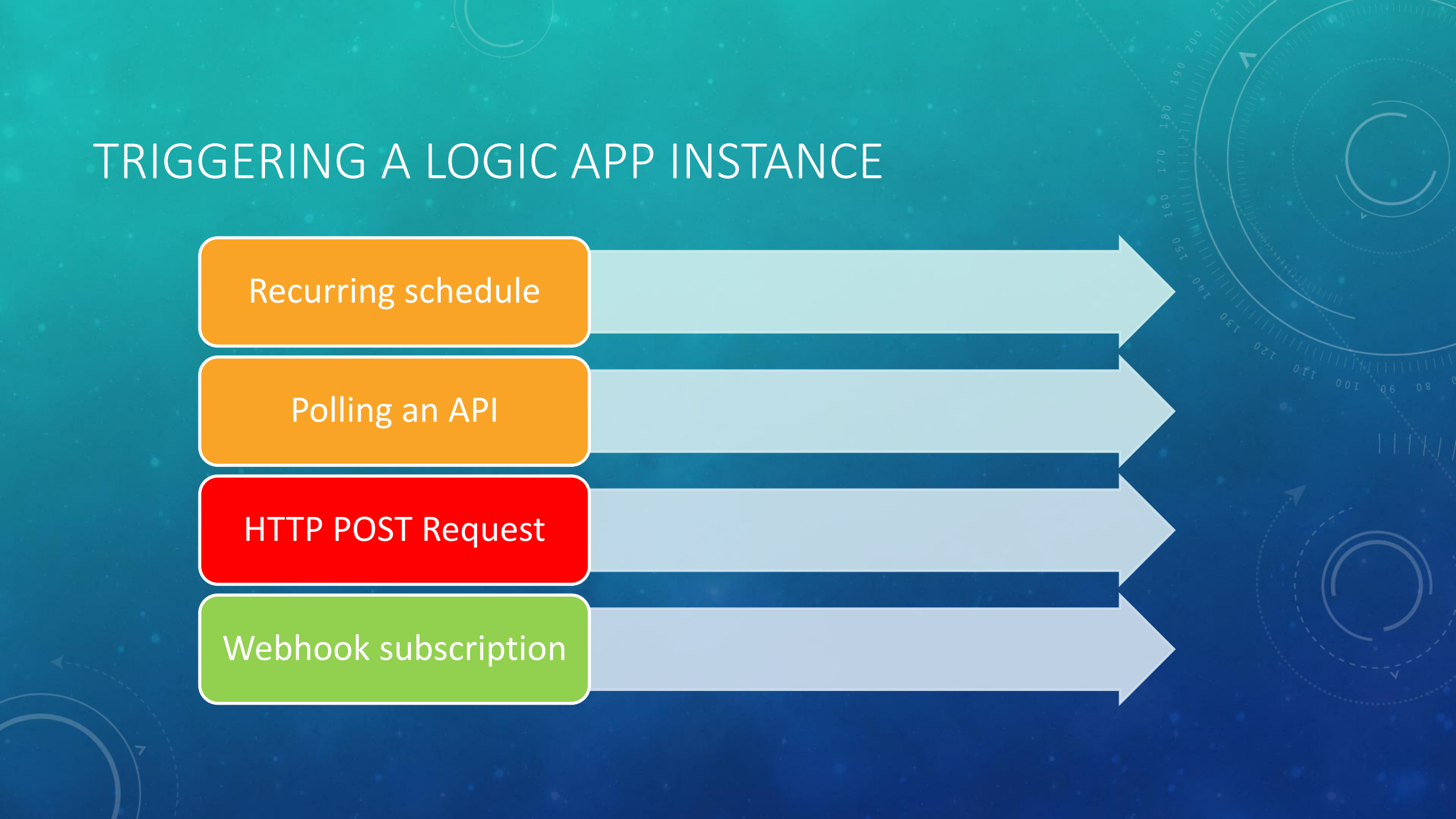
# TRIGGERING A LOGIC APP INSTANCE

Recurring schedule

Polling an API

HTTP POST Request

Webhook subscription





# CONNECTORS (SAAS + HYBRID) & PROTOCOLS

- Azure Blob
- Azure Service Bus
- Bing Search
- Dropbox
- Dynamics CRM Online
- GitHub
- MailChimp
- OneDrive
- Salesforce
- SendGrid
- SharePoint Online
- Slack
- SQL Azure
- Trello
- Twilio
- Twitter
- VSO
- Wunderlist
- Yammer
- HTTP, HTTPS (REST or Swagger)
- HTTP Webhook
- FTP, SFTP
- SMTP
- RSS

# BIZTALK (ENTERPRISE INTEGRATION PACK) & HYBRID

- Validate
- Transform (+Mapper)
- Convert (XML-FF)
- X12
- EDIFACT
- AS2
- Party resolution
- SQL Server
- IBM DB2
- Oracle DB
- File
- SharePoint Server
- Informix
- Websphere MQ
- SAP
- Oracle EBS
- CICS

# CUSTOM APIS, CODE AND COMPONENTIZATION

- Host custom web services
- Utilize the power of App Services
- Auto-discovery
- First-class designer experience

API Apps



- Extend Logic Apps capabilities with custom code
- Auto-discovery of your Azure Functions
- Create Azure Functions inline

Azure Functions



- Componentize logic across workflows for re-use
- Auto-discovery of Workflows in subscription
- Built in long running asynchronous support
- Secure using RBAC

Nested Workflows



# CONTROL FLOW

Response



For Each



Split On



Do Until



Conditions



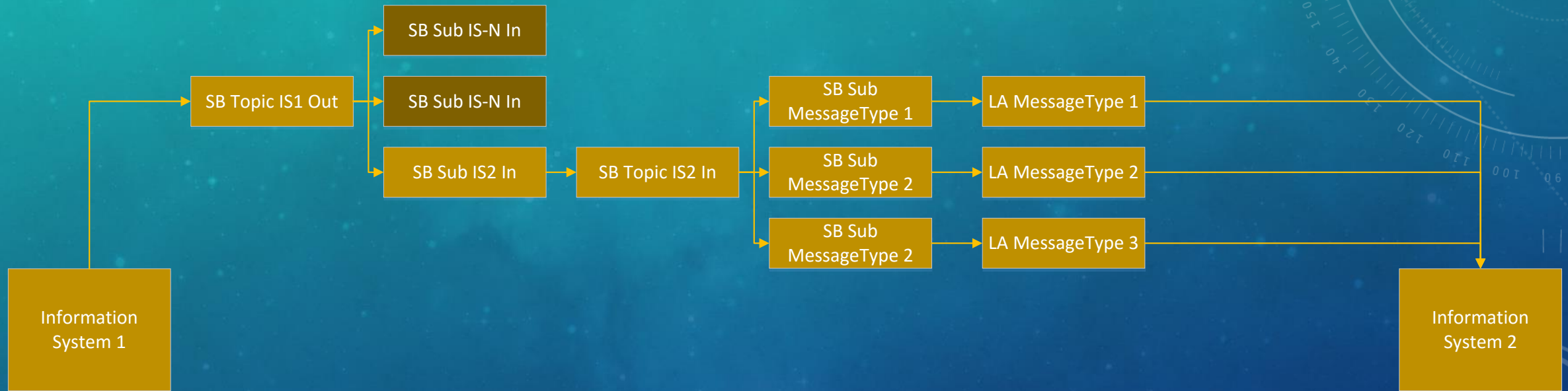


# BUILT-IN FUNCTIONS

- @if(<expression>, <true>, <false>)
- @xml(<string/object>)
- @xpath(<xml>, <xpath>)
- @json/base64/binary/datauri/string()
- @result(<scope>, <status>)
- @concat (Important for parameterization of templates!)

# REAL-LIFE CASE (IN PRODUCTION)

# ARCHITECTURE



DEMO



# DEBUGGING

- Trigger history shows polling results
- Run history shows details for each logic app run
  - Run statistics
  - Action execution log
    - All of the inputs to the action
    - All of the outputs from the action
    - Status and errors

# DEPLOYMENT AND RELEASE MANAGEMENT

The background features a gradient from teal at the top to dark blue at the bottom, overlaid with a pattern of small white dots. Faint, semi-transparent circular diagrams are visible, including a large one in the top right with degree markings (90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210) and arrows, and another in the bottom right with dashed lines and arrows.

# DEPLOYMENT

- Via the Azure Portal (Visual Editor)
- Via Visual Studio (Visual Editor)
- Via Visual Studio with ARM template: the more parameterization, the better
  - Download Logic App definition with PowerShell (demo)
  - The JSON definition for this demo is about 700 lines

# RELEASE MANAGEMENT

- Parameterization for different environments using ARM
  - Separate parameters file for each environment (DTAP)
- CI/CD using VSO + Build
  - Service principal needs to be registered



# MONITORING

- Diagnostics can be enabled per Logic App
- Telemetry data can be sent to Azure Event Hubs (you can link them with your Operations dashboards)

PRICING! 😊

# PRICING CONSIDERATIONS: CONSUMPTION

ACTIONS EXECUTED / MONTH	PRICE PER ACTION EXECUTION
First 250K actions	€0.0007 / action
251K-1M actions	€0.0003 / action
1M-50M actions	€0.00013 / action
50M-100M actions	€0.00008 / action
100M+ actions	€0.000046 / action

Example: Polling every minute for a month = 45 000 actions x 7 Logic Apps = 190 EUR

# PRICING CONSIDERATIONS: APP SERVICE PLAN

Plan	Actions per day	Price per month
F1 (Free)	200	0 EUR
D1 (Shared)	200	8 EUR
B1 (Basic)	200	47 EUR
S1 (Standard)	10 000	63 EUR
S2 (Standard)	10 000	125 EUR
P2 (Premium)	50 000	188 EUR

Example: Polling every minute for a month = Fits in S1 plan or S2 plan = 63 EUR or 125 EUR



# HOW TO REDUCE THE BILL

- Use HTTP (manual) triggers instead of polling (and the polling yourself)
- Use Nested Logic Apps (also HTTP triggers)
- By default Logic Apps are created without an App Service Plan
  - Can be converted with PowerShell
  - When you download a template, it includes an App Service Plan

# SOME CHALLENGES

- Optimal way to split ARM templates
- Finding the optimal configuration for the lowest cost

FINALLY: A CHART IN CRM



# USEFUL LINKS

- Logic Apps Blog: <http://aka.ms/logicappsblog>
- Yammer Group: (sign-up) <http://aka.ms/azureadvisors> (Integration Advisors Group)
- Downloading Logic App deployment template: <https://azure.microsoft.com/en-us/documentation/articles/app-service-logic-create-deploy-template/>
- Authorize connection via PowerShell: <https://github.com/logicappsio/LogicAppConnectionAuth>
- Securing Logic Apps: <https://azure.microsoft.com/en-us/documentation/articles/app-service-logic-custom-hosted-api/>
- VSO automated deployment: <https://blogs.msdn.microsoft.com/visualstudioalm/2015/10/04/automating-azure-resource-group-deployment-using-a-service-principal-in-visual-studio-online-buildrelease-management/>
- Exception handling: <https://azure.microsoft.com/en-us/documentation/articles/app-service-logic-exception-handling/>



# THANK YOU!

- More questions:
  - stoitsev [at] live [dot] com
  - <https://nl.linkedin.com/in/stoitsev>
  - @vassilstoitsev

# REFERENCE DECKS

- Some **great** decks from INTEGRATE 2016:
  - <http://biztalk360.blob.core.windows.net/integrate2016/Kevin-Lam-and-Jeff-Hollan-Powerful-Integration-and-Workflow-Automation.pptx>
  - <http://biztalk360.blob.core.windows.net/integrate2016/Michael-Stephenson-Integration-in-Digital-Transformation.pptx>