https://www.youtube.com/watch?v=3n1NpmtJ5G8

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aws SUMMIT

The Seven Habits of Highly Successful Builders

Constantin Gonzalez

Principal Solutions Architect, Amazon Web Services

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What you'll get out of this session

- What is a "Builder"?
- Best practices for how to get the most out of AWS … and out of your business/carreer/professional life
- A better way to build and run "digital" apps
- Customer examples of builders
- Food for thought

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Digitization

=

Data → Value

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Digitization

=

Data → Value

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Digitization

=

Data → Value

What you want

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What you have

Digitization

=

Data → Value

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Digitization

=

Data → Value

What you must build

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Digitization

=

Data → Value

What you must build

(cannot outsource)

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Old IT

- Waterfall
- Project Management
- Outsourcing
- Vendor Management
- RFIs/RFPs
- Meetings
- Change Requests
- Process

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Old IT

- Waterfall
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- Process

Not Building

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Not a Builder

IT Doesn't Matter

by Nicholas G. Carr

As information technology's power and ubiquity have grown, its strategic importance has diminished. The way you approach IT investment and management will need to change dramatically.

IN 1968, a young Intel engineer named Ted Hoff found a way to put the circuits necessary for computer processing onto a tiny piece of silicon. His in-

success, a fact clearly reflected in their spending habits. In 1965, according to a study by the U.S. Department of Commerce's Bureau of Economic Analysis,

Harvard Business Review, 2003

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New IT

- Agile
- Sprints
- Insourcing
- API-Driven
- Pay-per-use
- Small teams
- Automation
- Code

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New IT

- Agile
- Sprints
- Insourcing
- API-Driven
- Pay-per-user
- Small teams
- Automation
- Code

Now we're building!

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At AWS,
we build tools for Builders

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Builders use, well, Building Blocks

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aws SUMMIT

What is a “Builder”?

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The Competent Man

“A human being should be able to change a diaper, plan an invasion, butcher a hog, conn a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, die gallantly. Specialization is for insects.”

— Robert Heinlein, Time Enough for Love

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Amazon Leadership Principles

Customer Obsession
Ownership
Invent and Simplify
Are Right, A Lot
Hire and Develop the Best
Insist on the Highest Standards
Think Big
Bias for Action
Frugality
Learn and Be Curious
Earn Trust
Dive Deep
Have Backbone; Disagree and Commit
Deliver Results

https://www.amazon.jobs/principles

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7 Best Practices for Builders

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1. Builders Learn and are Curious

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1. Builders Learn and are Curious

What does this button do?

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1. Builders Learn and are Curious

What does this button do?

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1. Builders Learn and are Curious

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1. Builders Learn and are Curious

- **Open new opportunities**
- **Find better ways**
- **Shed light on blind spots**
- **Keep up with technology**
- **Fuel your personal growth**
- **More interesting**

What does this button do?

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Learn to Learn and be Curious

- **Dedicate time for learning and being curious**
- **Do so consistently**
- **Outside of your comfort zone**
- **A new language, a new framework, a new activity, a new anything**
- **Visit random meetings/conferences/meetups**
- **Increase entropy and collisions**
- **Inspiration and new perspectives**

Image: Unsplash

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2. Builders Invent and Simplify

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« Invention requires two things: the ability to try a lot of experiments, and not having to live with the collateral damage of failed experiments »

Andy Jassy

CEO, Amazon Web Services

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Image: Unsplash

1970

Image: Unsplash

Image: Unsplash

2. Builders Invent and Simplify

- **Digitization is all about inventing new ways to do stuff “digitally”**
- **„New“ doesn’t have to be complex**
- **Sometimes, „simple“ is much better**

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BMW re:Invented the “Car as a Sensor”

AWS Case Study: BMW

BMW
AWS re:Invent 2015

About BMW

The BMW Group is using AWS for its new connected-car application that collects sensor data from BMW 7 Series cars to give drivers dynamically updated map information. BMW Group is one of the leading manufacturers of premium cars and mobility services in the world, with brands such as Rolls Royce, BMW, and Mini. BMW built its new car-as-a-sensor (CARASSO) service in only six months leveraging Amazon Simple Storage Service (Amazon S3), Amazon Simple Queue Service (Amazon SQS), Amazon DynamoDB, Amazon Relational Database Service (Amazon RDS), and AWS Elastic Beanstalk. By running on AWS, CARASSO can adapt to rapidly changing load requirements that can scale up and down by two orders of magnitude within 24 hours. By 2018 CARASSO is expected to process data collected by a fleet of 100,000 vehicles traveling more than eight billion kilometers.

AWS re:Invent 2015 Keynote | Dieter May, SVP Digital Business Models, BMW (8:31)

https://aws.amazon.com/solutions/case-studies/bmw/

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What Not to Invent:

Image: Unsplash

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TECHNICAL & BUSINESS SUPPORT

- Support
- Professional Services
- Optimization Guidance
- Partner Ecosystem
- Training & Certification
- Solutions Management
- Account Management
- Security & Billing Reports
- Personalized Dashboard

MARKETPLACE

- Business Apps
- Business Intelligence
- DevOps Tools
- Security
- Networking
- Databases
- Storage

ANALYTICS

- Data Warehousing
- Elasticsearch
- Business Intelligence
- Data Pipelines
- Hadoop/Spark
- Interactive SQL Queries
- Streaming Data Analysis
- ETL
- Streaming Data Collection

APP SERVICES

- Queuing & Notifications
- Email
- Workflow
- Transcoding
- Search

DEV/OPS

- One-click App Deployment
- Resource Templates
- Build and Test
- Application Lifecycle Management
- DevOps Resource Management
- Triggers
- Containers
- Analyze and Debug

MOBILE SERVICES

- API Gateway
- Single Integrated Console
- Identity
- Sync
- Mobile Analytics
- Mobile App Testing
- Targeted Push Notifications

IoT

- Rules Engine
- Device Shadows
- Device SDKs
- Device Gateway
- Registry
- Local Compute

AI

- Machine Learning
- Image Recognition
- Text to Speech
- Conversational Interface
- Deep Learning Frameworks

ENTERPRISE APPS

- Virtual Desktops
- Sharing & Collaboration
- Corporate Email
- App Streaming
- Communications

HYBRID ARCHITECTURE

- Data Integration
- Integrated Networking
- Integrated Identity & Access
- Integrated Resource & Deployment Management
- Integrated Devices & Edge Systems

MIGRATION

- Schema Conversi
- Exabyte-Scale Data Migration
- Application Migration
- Database Migration
- Server Migration

INFRASTRUCTURE

- Regions
- Availability Zones
- Points of Presence

CORE SERVICES

- Compute VMs, Auto-scaling, Load Balancing, Containers, Virtual Private Servers, Batch Computing, Cloud Functions, Elastic GPUs, Edge Computing
- Storage Object, Blocks, File, Archivals, Import/Export, Exabyte-scale data transfer
- Databases Relational, NoSQL, Caching, Migration, PostgreSQL compatible
- Networking VPC, DX, DNS
- CDN

SECURITY & COMPLIANCE

- Identity Management
- Access Control
- Monitoring & Logs
- Assessment & Reporting
- Web Application Firewall
- Configuration Compliance
- Key Management & Storage
- Account Grouping
- Resource & Usage Auditing
- DDOS Protection

MANAGEMENT TOOLS

- Manage Resources
- Service Catalogue
- Configuration Tracking
- Monitoring
- Server Management
- Resource Templates

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Instead…

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3. Builders Obsess Over Customers

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Working Backwards From Your Customer

1. Press release
2. FAQ
3. Build

Amazon Web Services Launches New Capabilities for Mobile Developers

AWS Mobile Services make it simpler and more cost-effective to build and scale mobile apps on the AWS Cloud

SEATTLE--(BUSINESS WIRE)--Mon. XX, 2014-- Amazon Web Services, Inc. (AWS), an Amazon.com company (NASDAQ:AMZN), today announced several new capabilities to make it easier for developers to build, deploy, and scale mobile applications. Amazon Cognito is a new service that provides simple user identity and data synchronization that lets developers create apps that authenticate users through popular public login providers, and then keep app data such as user preferences and game state synced between devices. The new Amazon Mobile Analytics service allows developers to easily collect and analyze app usage data, up to billions of events per day from millions of users, and delivers usage reports within an hour of data being sent by the app. AWS is also introducing a new unified Mobile Software Development Kit (SDK) that makes it easy for iOS, Android, and Fire OS developers to access the new Amazon Cognito and Amazon Mobile Analytics services as well as popular AWS services like Amazon S3 and Amazon DynamoDB. To get started with AWS Mobile Services, visit http://aws.amazon.com/mobile.

Today, many app developers around the world use the AWS Cloud as infrastructure building blocks for the back-end services that power their mobile applications. Still, these mobile app developers have had to spend valuable time on undifferentiated heavy lifting like connecting apps to storage and database services and integrating core functionality such as authentication, user management, notifications, and usage data analytics. With Amazon Cognito, Amazon Mobile Analytics, and the AWS Mobile SDK, developers are now able to focus more of their energy on what matters, the differentiated functionality of their app that attracts and retains end users.

With AWS Mobile Services, developers can:

- **Securely store, manage, and sync user identities and data (Amazon Cognito)**

As more and more users utilize the same apps across various devices running different mobile platforms, developers often have to manage multiple user logins to securely store and retrieve data for their users, reconcile different versions of the data as devices go on and offline, and keep data in sync between devices. With Amazon Cognito, developers can incorporate these capabilities into their apps with just a few lines of code. Amazon Cognito lets developers build apps that allow users to start off as unauthenticated guests and then sign in with Amazon, Facebook, or Google. Amazon Cognito manages the complexity of keeping app data in sync on all devices associated with a user identity. Developers can also use Amazon Cognito's client SDK to create a local data store, which caches user data on the device so that apps can keep working the same way regardless of whether the device is on or offline. Additionally, Amazon Cognito makes it simple to implement AWS security best practices (such as not embedding AWS credentials into source code) by providing a set of temporary, limited-privilege AWS credentials that developers can use to access AWS services such as Amazon Mobile Analytics, Amazon SNS, Amazon S3, or Amazon DynamoDB from their mobile app. Developers receive 10 GB of storage for synced data and one million sync operations per month for free for up to 12 months with the AWS Free Tier.

- **Quickly access and understand app usage data (Amazon Mobile Analytics)**

Analytics such as how many users an app has, how much revenue it's generating, and what a user is doing with the app are

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4. Builders Dive Deep

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Cause of Error (CoE) reports

1. A brief, no-blame description of what went wrong
2. Customer/business impact caused by the problem
3. Detail analysis on root cause of the problem
4. Metrics and Graphs
5. Security implications, if any found
6. Lessons learned
7. Corrective actions
8. Action items
9. Related items (Trouble Tickets, etc.)

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Diving Deep

- Data Lakes are just the beginning
- Monitor everything
- Learn to understand your data
- Identify the right KPIs
- Ask the 5 whys
- Do Cause-of-Error reports

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“The thing I have noticed is when the anecdotes and the data disagree, the anecdotes are usually right. There's something wrong with the way you are measuring it.”

– Jeff Bezos

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5. Builders are Owners

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Who owns the solution?

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Image: Unsplash

2-Pizza Teams Adopted by Customers

AWS re:Invent 2017: The Enterprise Fast Lane (ARC315)
https://youtu.be/ICX1xOGiLQE

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6. Builders Insist on High Standards

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Image: Unsplash

“Building a culture of high standards is well worth the effort, and there are many benefits. Naturally and most obviously, you’re going to build better products and services for customers – this would be reason enough! Perhaps a little less obvious: people are drawn to high standards – they help with recruiting and retention. More subtle: a culture of high standards is protective of all the “invisible” but crucial work that goes on in every company.”

– Jeff Bezos, Amazon 2018 annual shareholder letter

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AWS Well-Architected

Learn, measure, and build using architectural best practices

AWS Well-Architected

The Well-Architected framework has been developed to help cloud architects build the most secure, high-performing, resilient, and efficient infrastructure possible for their applications. This framework provides a consistent approach for customers and partners to evaluate architectures, and provides guidance to help implement designs that will scale with your application needs over time.

Build and deploy faster

Stop guessing capacity needs, test systems at scale, and use automation to make experimentation easier by building cloud-native architectures.

Lower or mitigate risks

Understand where you have risks in your architecture, and address them before your applications are put into production.

Make informed decisions

Determine how architectural decisions and/or trade-offs might impact the performance and availability of your applications and business outcomes.

Learn AWS best practices

Access training and whitepapers that provide guidance based on what we have learned through reviewing thousands of customers' architectures on AWS.

7. Builders Deliver Results

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Builders Deliver Results

1. **Learn And Be Curious**
2. **Invent And Simplify**
3. **Customer Obsession**
4. **Dive Deep**
5. **Ownership**
6. **Insist On High Standards**
7. **Deliver Results**

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Bonus:
Builders Earn Trust

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“In theory, there’s no difference between theory and practice.

In practice, there is.”

– Yogi Berra (and others)

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Amazon Elastic Map Reduce
Lead Scoring
Storage
Amazon Redshift
Leads/ Contacts
Upload Features
AMAZON WEB SERVICES
BUILD ON
GUI
API

Thank You!

Please complete the session survey in the summit mobile app.

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Thank You!

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