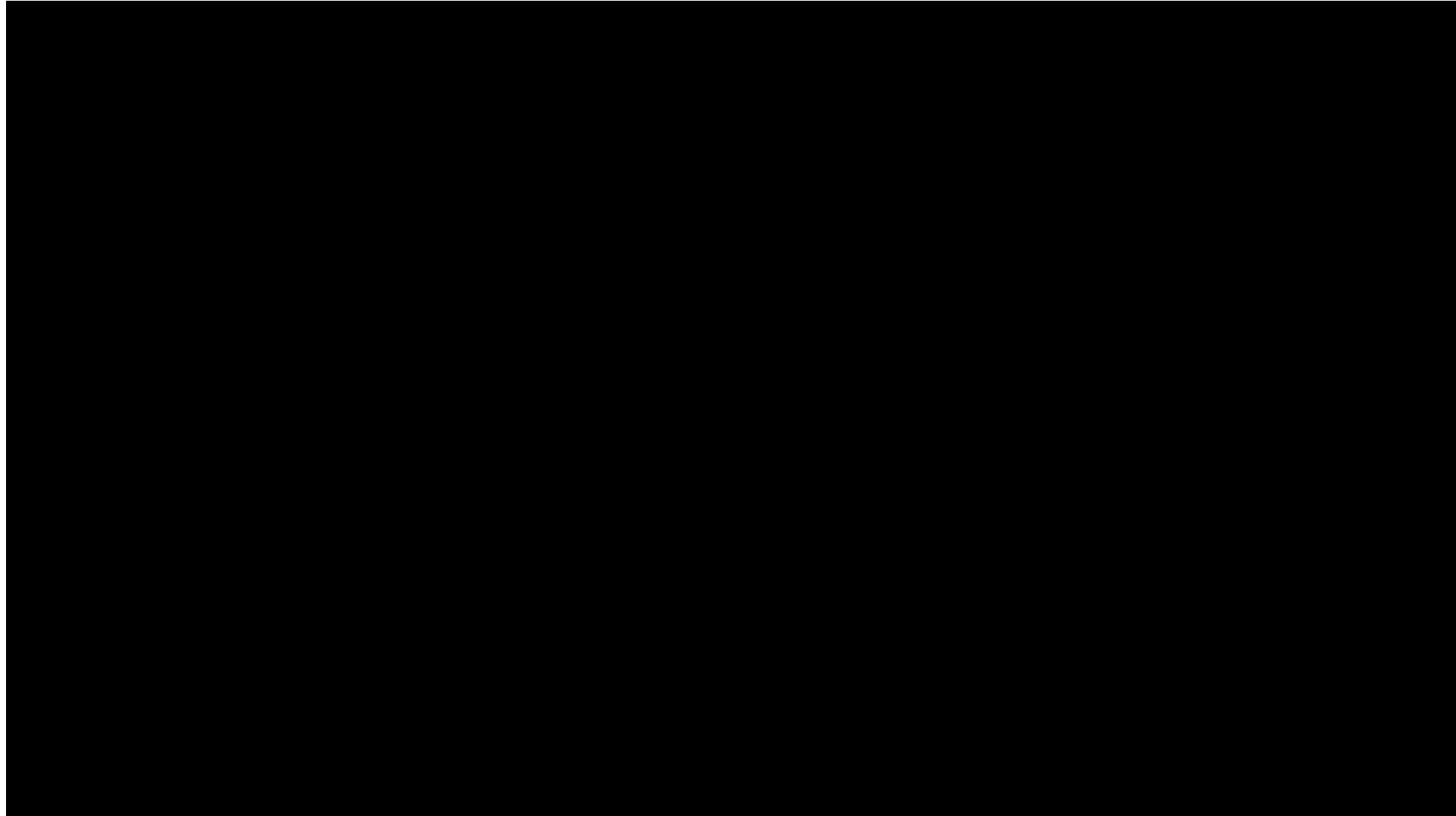




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# NX Continuous Release Delivering Innovation Faster



## What we hear from you

In the 2017 Voice of the Customer Survey you told us you wanted

- Faster turnaround of product enhancements while maintaining NX quality levels
- Smaller and easier deployments



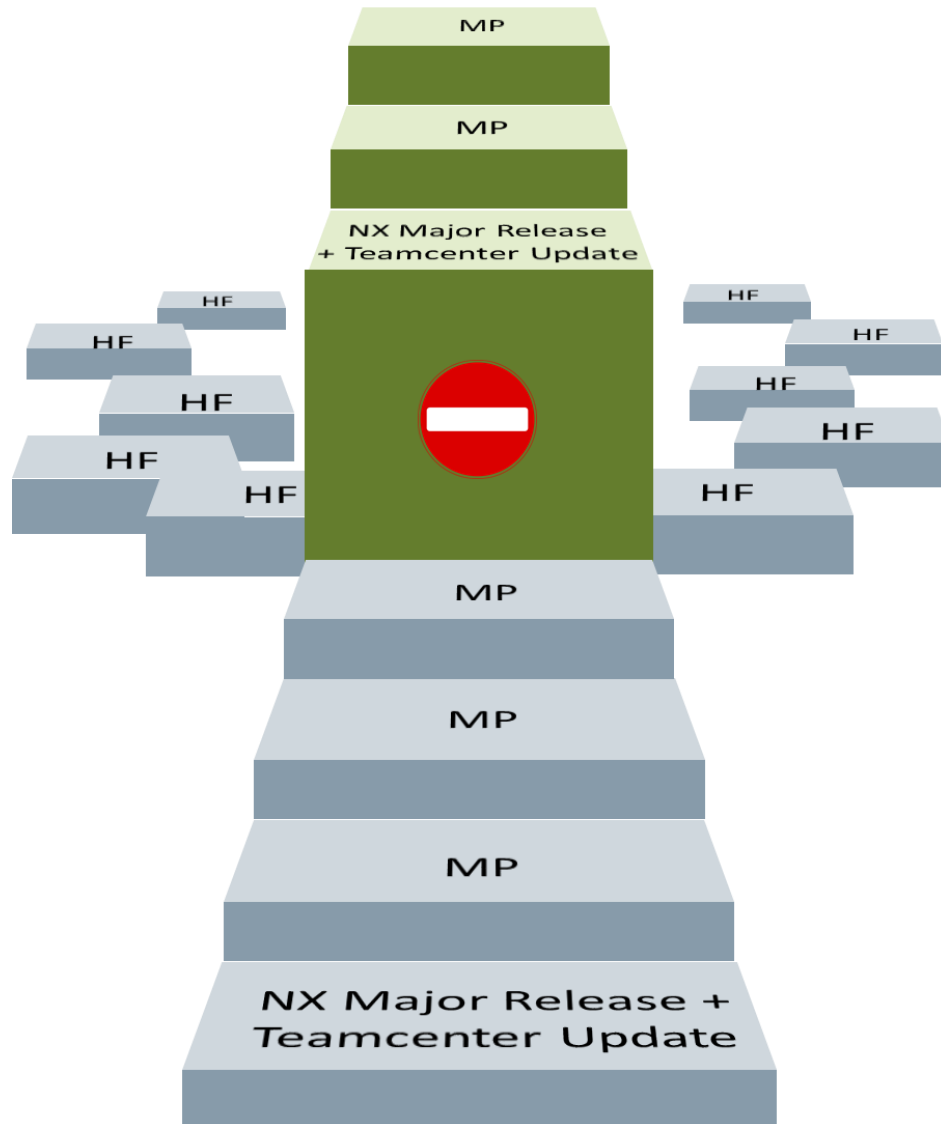
## What we see

Agile software companies are delivering automated upgrades on a more frequent basis

- Becoming both the acceptable and expected approach to delivering applications
- Example: Microsoft Windows operating system quasi-automatic update with customer IT gate



# Historical Deployment steps



Perceived high cost of deployment makes some customers reluctant to take the next step

- Resulting in end users using older software

Potential deployment barriers include:

- Perceived need for pre-deployment activities
- Perception based on history and folklore
- Teamcenter Upgrades
- Packaging and installation logistics
- Training costs
- Maintaining compatibility with partners and suppliers

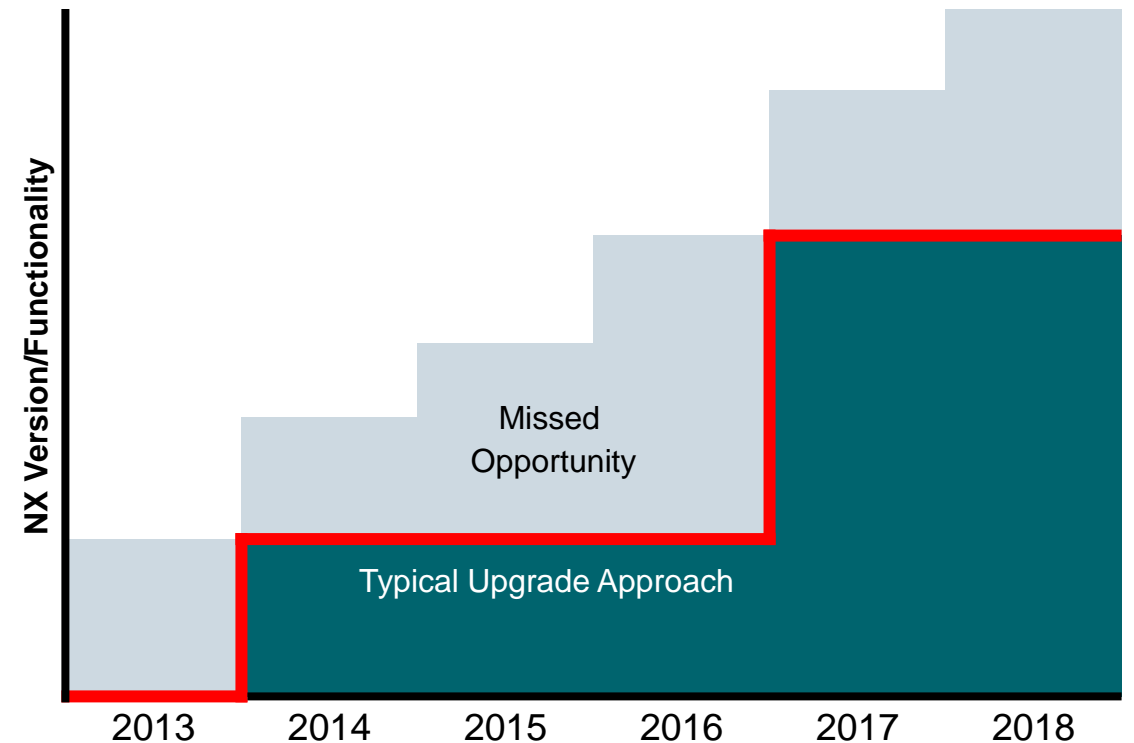
# The impact of delayed deployment

On average companies take 3 years to deploy new NX releases which means

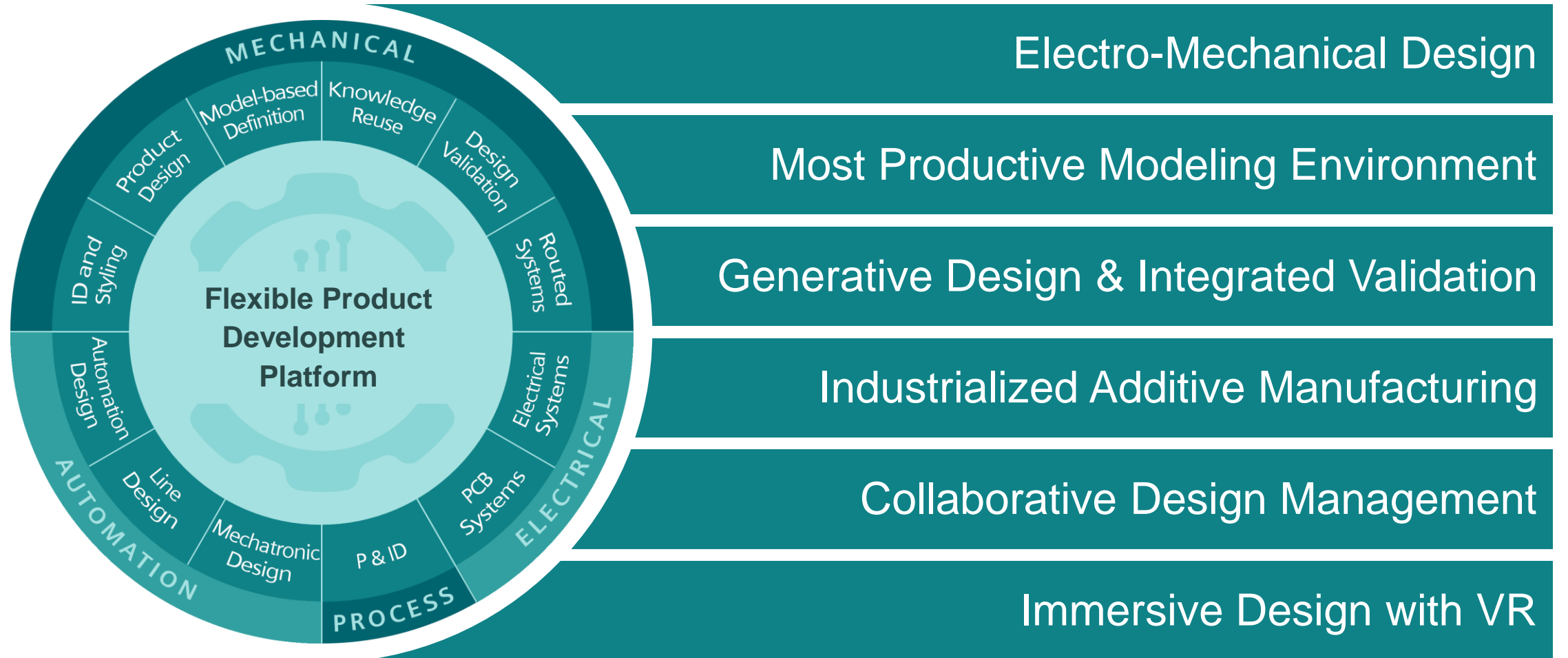
1. You risk being incompatible with suppliers and customers
2. You are risking your team's happiness
3. You risk falling behind your competitors

And most importantly

4. You are wasting time and money and not benefitting from 1000's customer driven enhancements and PR fixes



# NX: Breaking down the barriers to innovation



# NX Platform Strategy and Upgrade Readiness

Every NX release is customer deployment ready

NX is built on the most modern architecture of any major CAD/CAM/CAE solution

NX is the leading CAx software for use of existing customer data in new enhancement releases

NX directly reads and enables modification of previous NX and Unigraphics release customer data

- Goes back to the first Unigraphics release (circa 1984)

NX has consistently has improved the upgrade process through quality and product improvements, with priority on customer data





# Customer Deployment - Recent Experiences

- Major customers deploying NX releases faster than ever
  - Daimler deployed NX 11 within 4 months
  - GM deployed NX 11 at half the cost of previous deployment
  - Aston Martin deployed NX 12 within 2 months
- Customer deployments of NX 11.x and NX 12.x during 2018 were reported as positive, high quality NX Design product releases



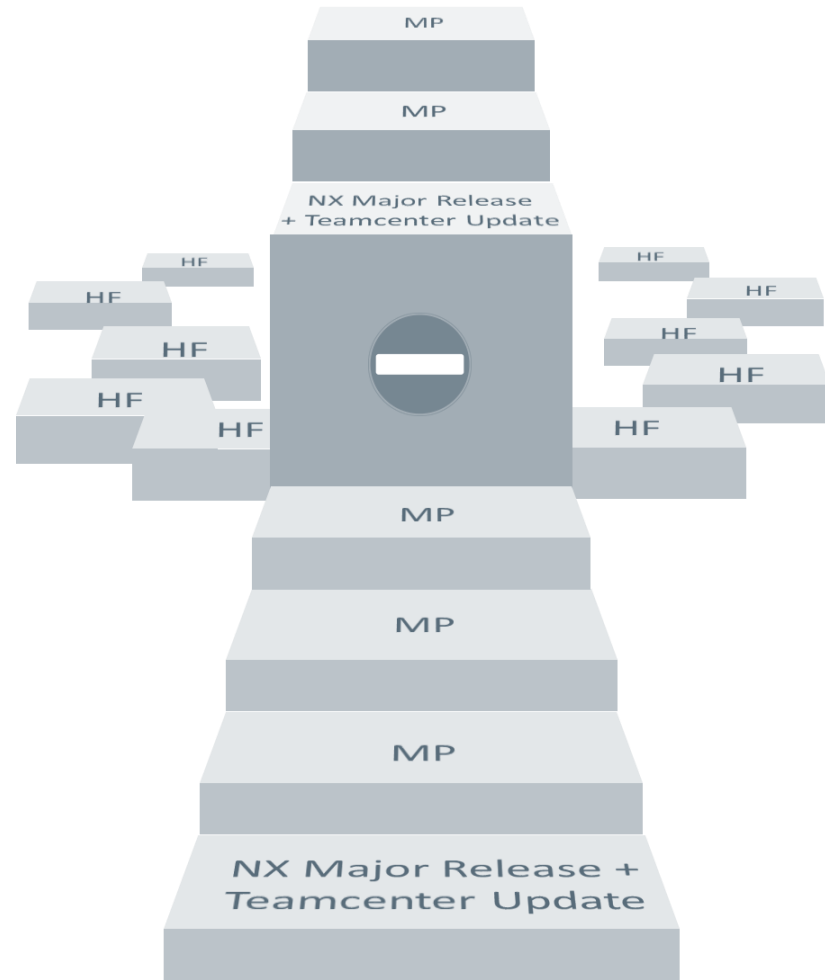
# January 2019



# NX Continuous Release

Three interlocking gears of varying sizes, rendered in a light gray, semi-transparent style. They are arranged in a cluster on the right side of the slide, with one gear in the foreground and two behind it, partially overlapping. The gears have a metallic texture and are set against a plain white background.

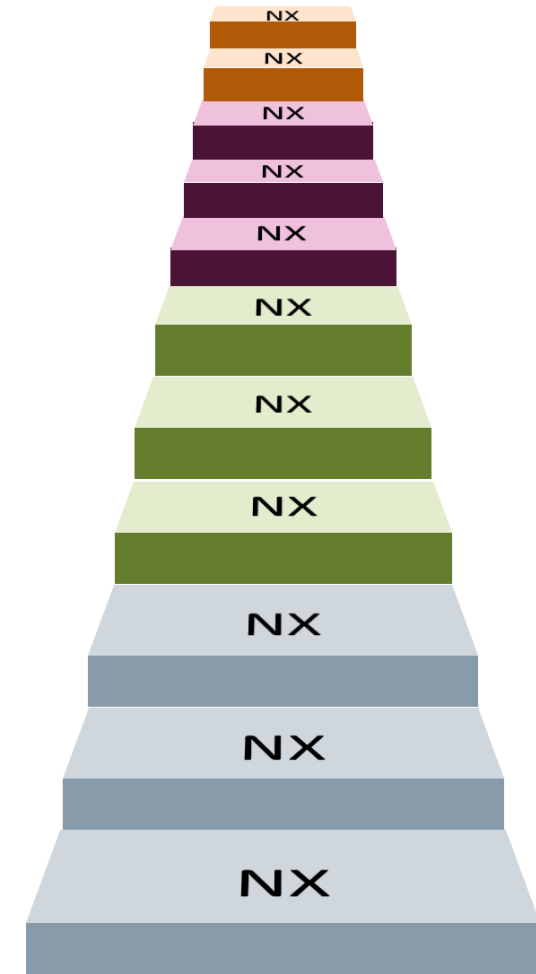
# Deployment steps going forward



## Continuous Release:

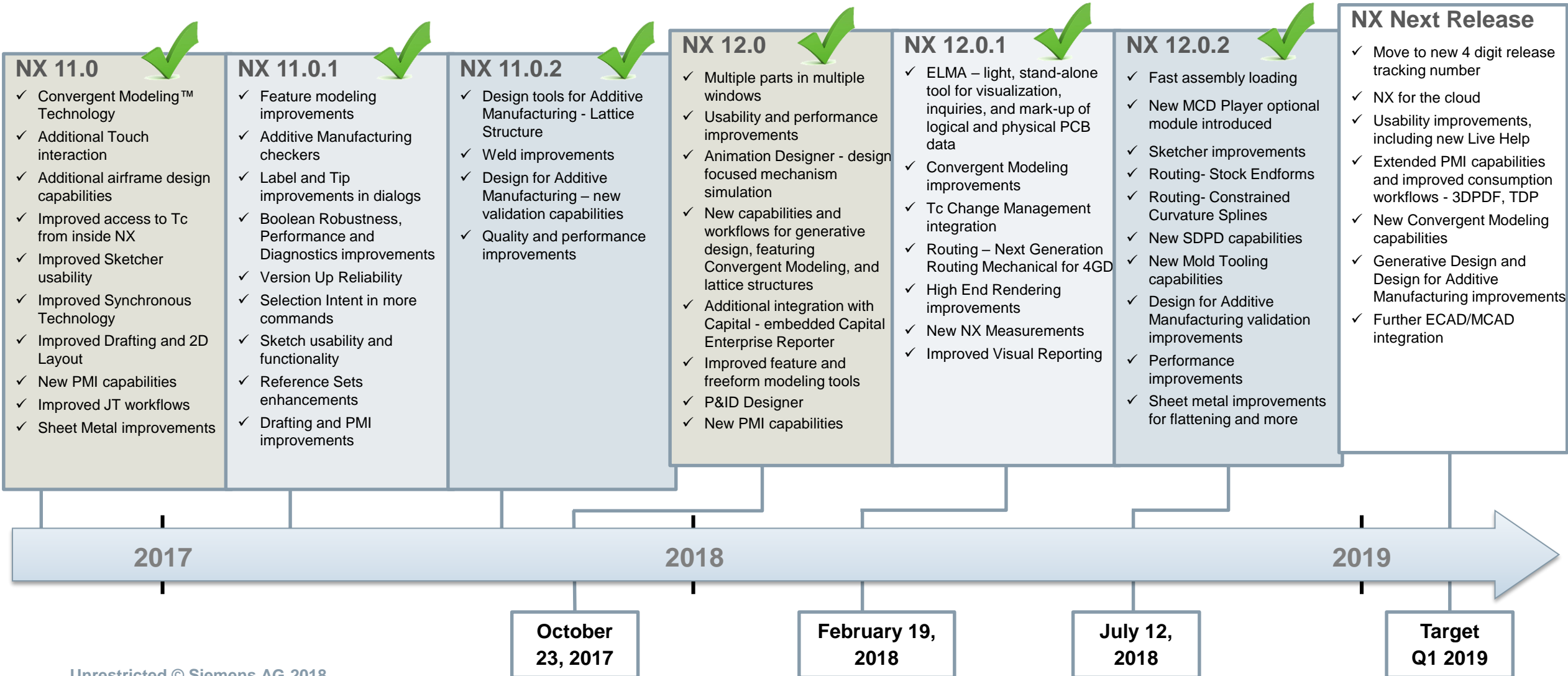
- Regular **easy steps**
- Same **low effort** for an enhancement release as a maintenance release
- **No distinction** between types of releases
- **No Teamcenter upgrade** necessary for supported Teamcenter versions when upgrading NX

Deploying productivity enhancements up to six times faster



# NX Release Roadmap

Updated: July 13, 2018



# NX Release Roadmap

Updated: July 29, 2018



## NX 12.0.2



- ✓ Fast assembly loading
- ✓ New MCD Player optional module introduced
- ✓ Sketcher improvements
- ✓ Routing- Stock Endforms
- ✓ Routing- Constrained Curvature Splines
- ✓ New SDPD capabilities
- ✓ New Mold Tooling capabilities
- ✓ Design for Additive Manufacturing validation improvements
- ✓ Performance improvements
- ✓ Sheet metal improvements for flattening and more

## NX 1847

- ✓ NX Continuous Release Strategy
- ✓ Move to new 4 digit release tracking number
- ✓ Every NX release is customer deployment ready
- ✓ Enables improved PR responsiveness
- ✓ Enables faster ER delivery
- ✓ Enables response to global IT security threats
- ✓ De-emphasis release number
- ✓ Extended PMI capabilities and improved consumption workflows - 3DPDF, TDP
- ✓ Further ECAD/MCAD integration

## NX 1872

- ✓ Improved performance for JT loading
- ✓ Further ECAD/MCAD integration
- ✓ Enables on-line deployment alternatives

2019

2020

July 12,  
2018

Q1 2019

Q3 2019

# The value of continuous release

Receive functional enhancements faster allowing you to boost your productivity

Consistent schedule for updates allow you to better plan adoption of new technologies

Increased responsiveness to new ideas and trends

Reduced deployment cost for incremental updates

Faster, more consistent response from NX development vs. release dependent hotfixes

Continued focus on release quality and deployment



# What is Changing?





## Questions that come to mind...

What is changing with NX Continuous Release?

How will the new release and update model work?

How will NX settings and configurations be supported?

How will NX Open custom applications be handled?

How will the installation evolve?

How will 3<sup>rd</sup> party integrations work?

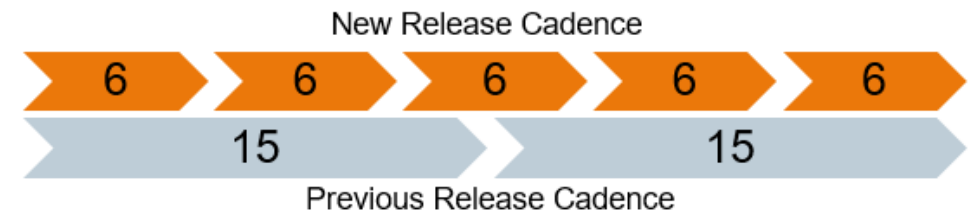
# NX Continuous Release Strategy

## What is Changing?

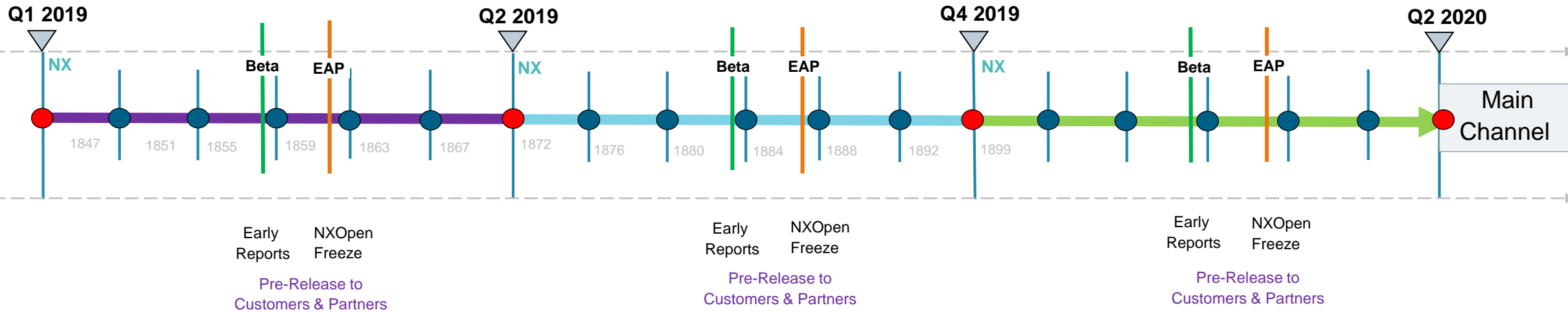
- Major functional enhancement releases target every ~6 months with update releases each month
- Incorporate agile development principles
- Deliver tools to help with customization upgrades
- Removed need to upgrade Teamcenter when upgrading NX
- Enhanced internal auto-test framework to further improve quality

## Customer Benefits

- Improved speed of adopting new functionality
- Reduced deployment costs
- Increased responsiveness to new ideas and trends



# Continuous Release Update Model



- Only 1 active main channel to be supported in Continuous Releases
- Functional enhancement releases every ~6 months (New functionality, enhancements, fixes) ●
- Update releases every month (fixes) ●
- Beta and EAP events prior to every functional enhancement release
- Early reports, NXOpen API freeze and Pre-Release can be accessed around Beta and EAP time frame
- Removed focus from versioning, each new release is purely “NX”

# Upgrading – Settings and Configurations



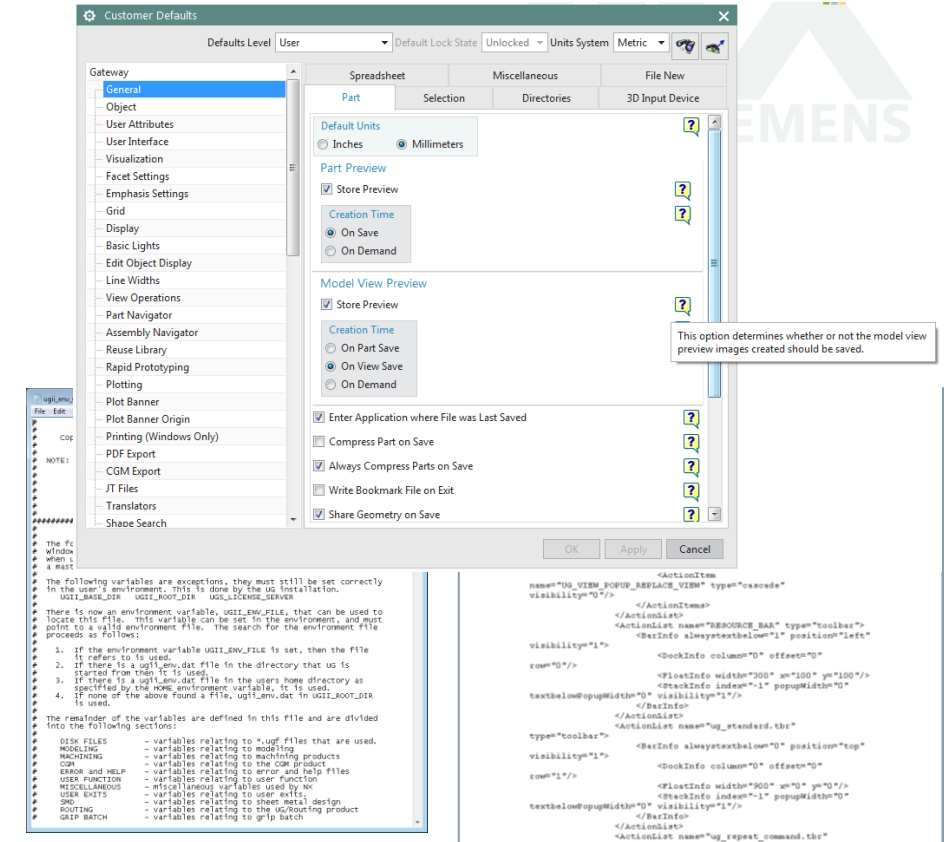
## What is Changing?

User Specific (Toolbar customization, Column order, etc.)

- Introduce file based registry
- Carry forward user specific configurations after successful NX update

Application Specific (Customer Defaults, Menu Buttons)

- Publishing what's changes configuration & customization specific reports in advance for every NX update
- Tools to carry forward group and site level configurations as part of the install process
- Ability to generate what's changed reports by comparing out-of-the-box NX configurations against customers NX configurations

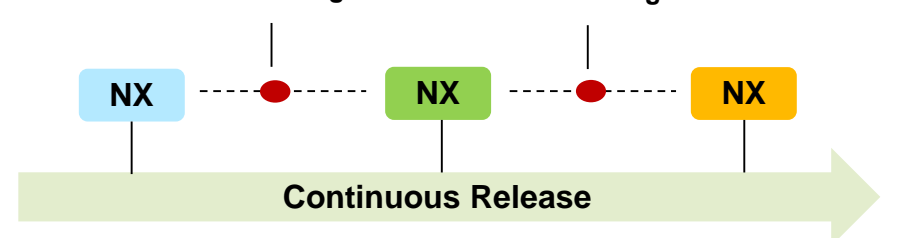


## Customer Value

- Reduce time required to upgrade NX configurations and eliminate or reduce the admin overhead for pre-upgrade planning

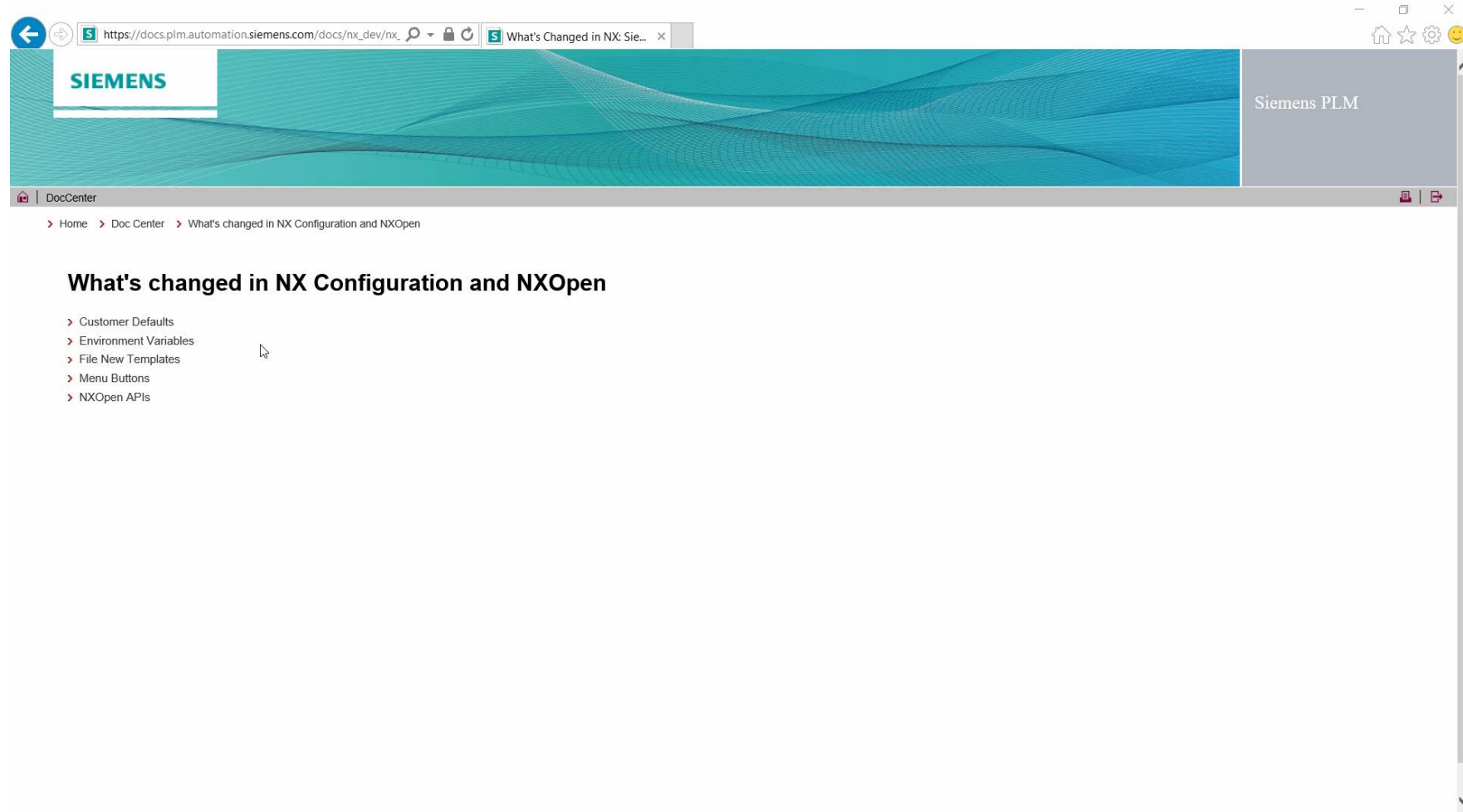
Early Reports on What's Changed

Early Reports on What's Changed



# Early Reports – Demo

## What's Changed in NX Configuration and Settings



# Upgrading – NXOpen Customization

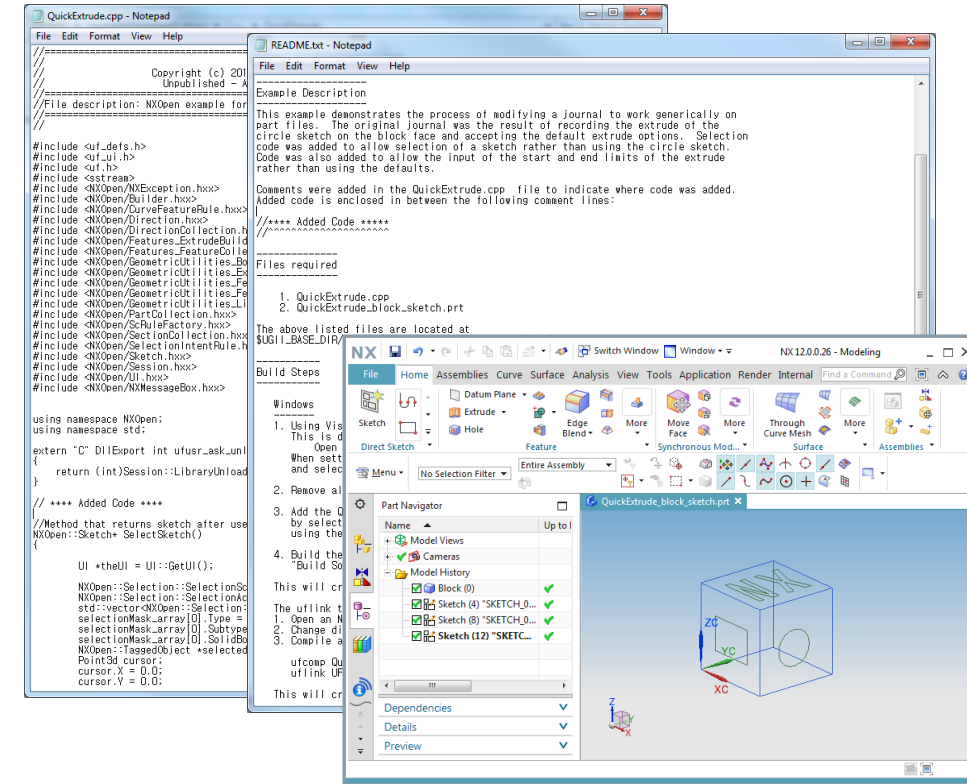


## What is Changing?

- Publish what's changed NXOpen APIs report in advance for every NX update
- Provide tool that customers can use to analyze their customization code and determine upgrade steps
- Tight feedback loop based on customer usage of **NXOpenReporter Tool**
- SPLM expects to offer this as a fee-based service starting in 2019

## Customer Value

- Promote better deployment planning and support effective NX upgrade by removing uncertainty regarding NX Open customization readiness and robustness
- Reduce time required for pre-deployment readiness, development and validation



Early Reports on What's Changed

Early Reports on What's Changed

NX

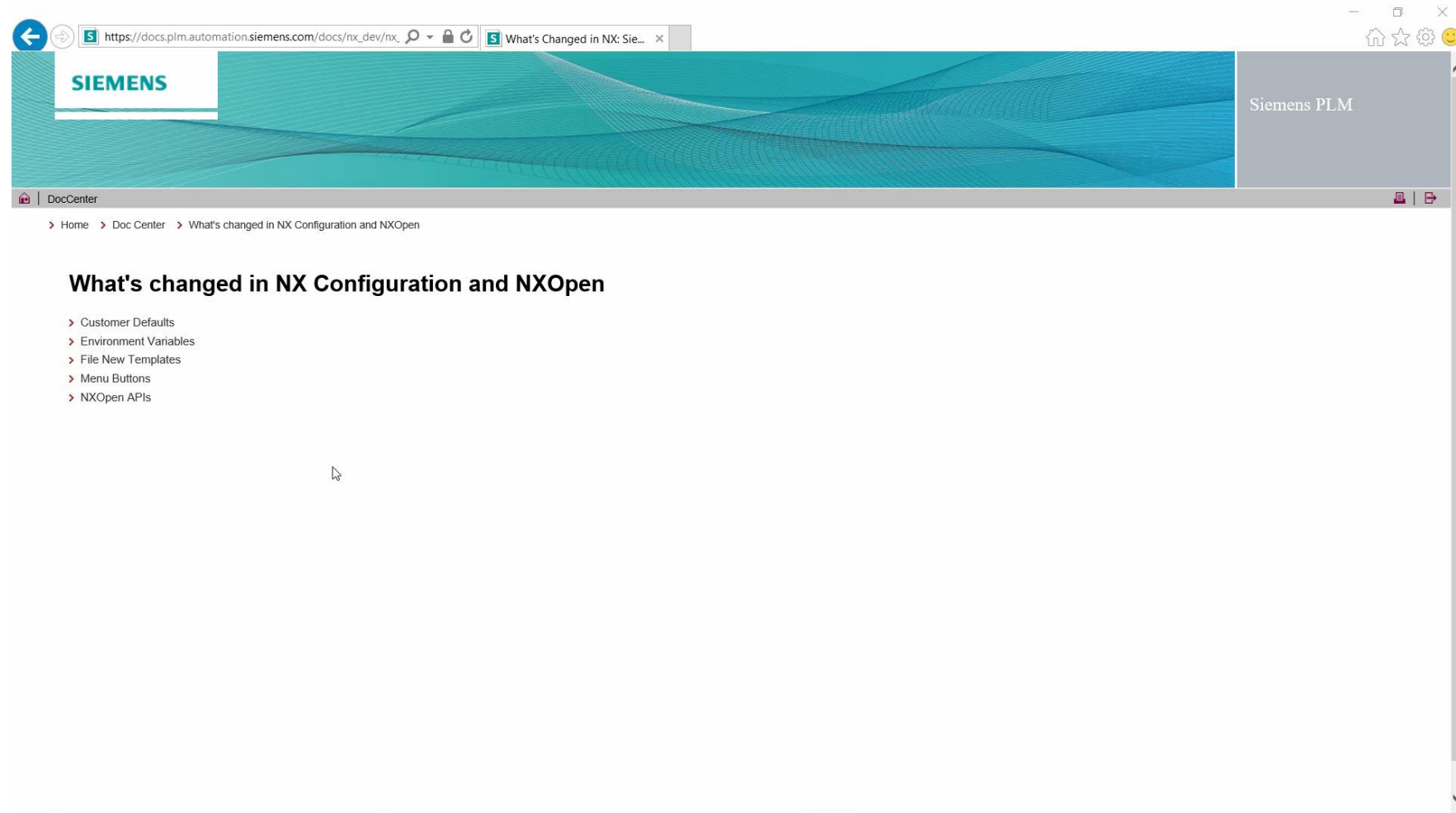
NX

NX

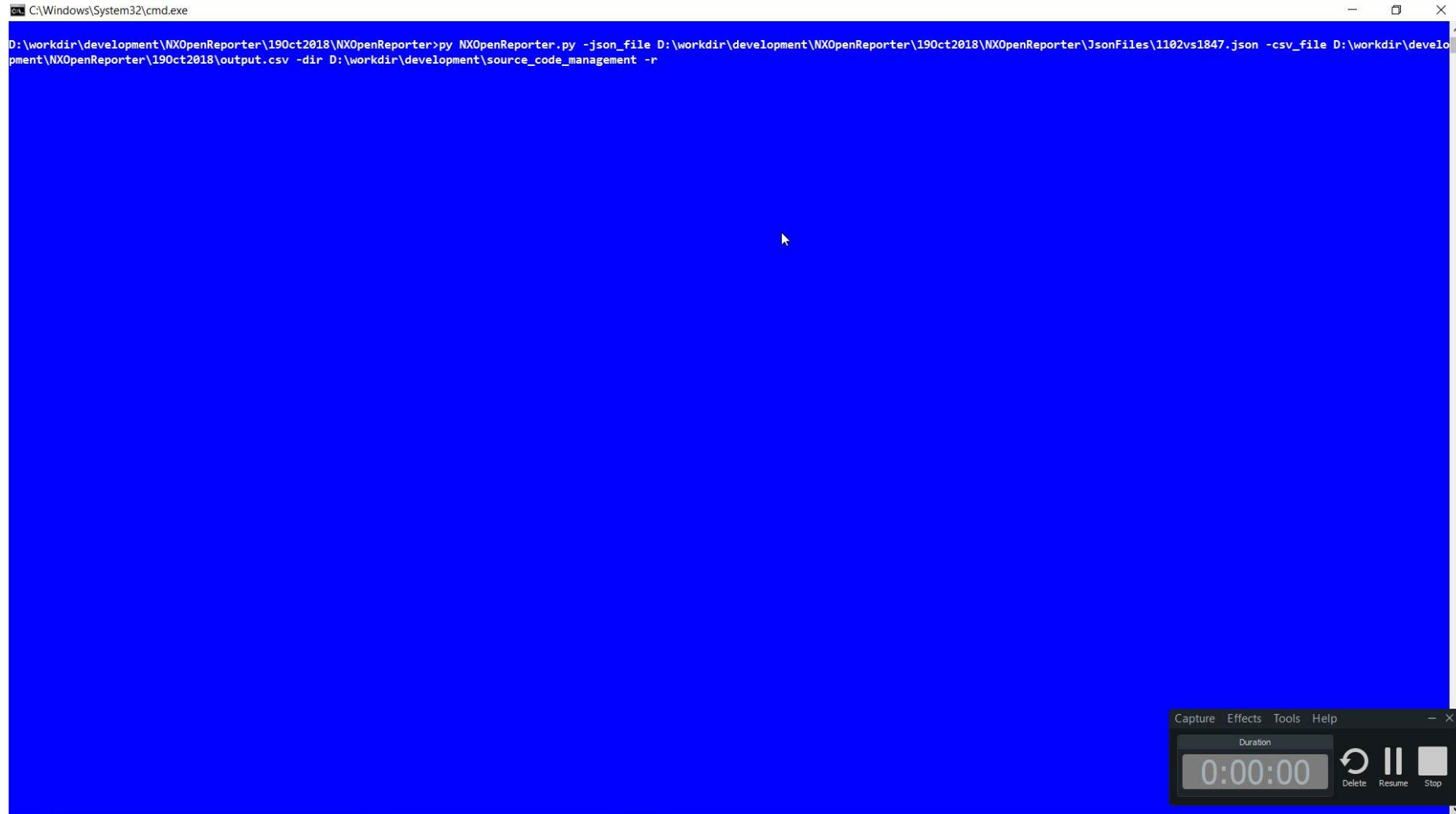
Continuous Release

# Early Reports – Demo

## What's Changed in NX Open API's



# NXOpenReporter Tool – Demo





# Expose Auto-Testing & Validation Framework

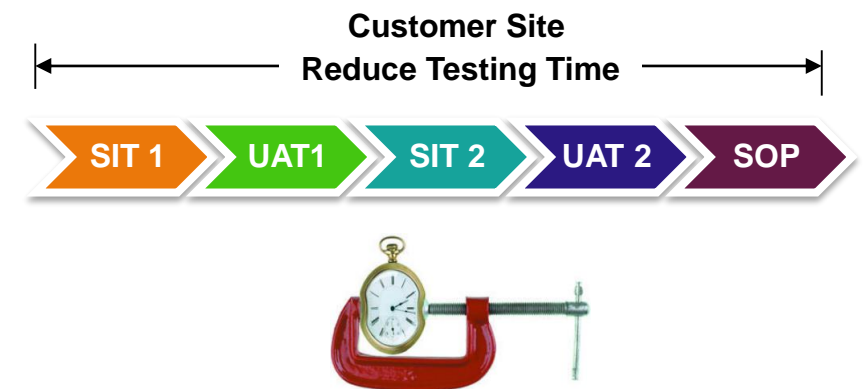
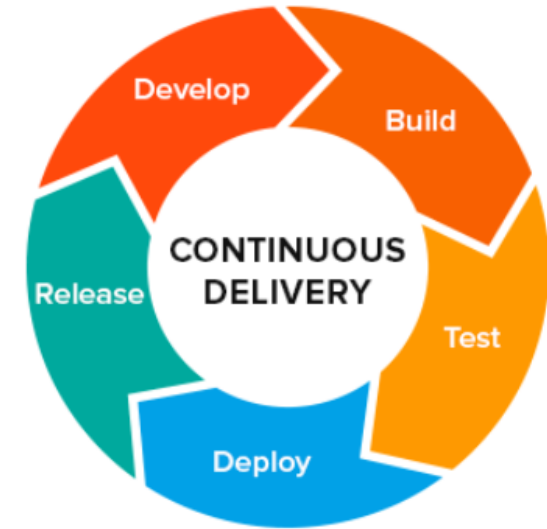


## What is Changing?

- Enhance existing journaling capabilities (Journal Manager Class) to help customers automate their test-cases
- Explore possibility of integrating auto-testing with existing validation framework

## Customer Value

- Reduce time required for NX pre-deployment readiness, integration testing and user acceptance testing



# NX Installation Utility Enhancements

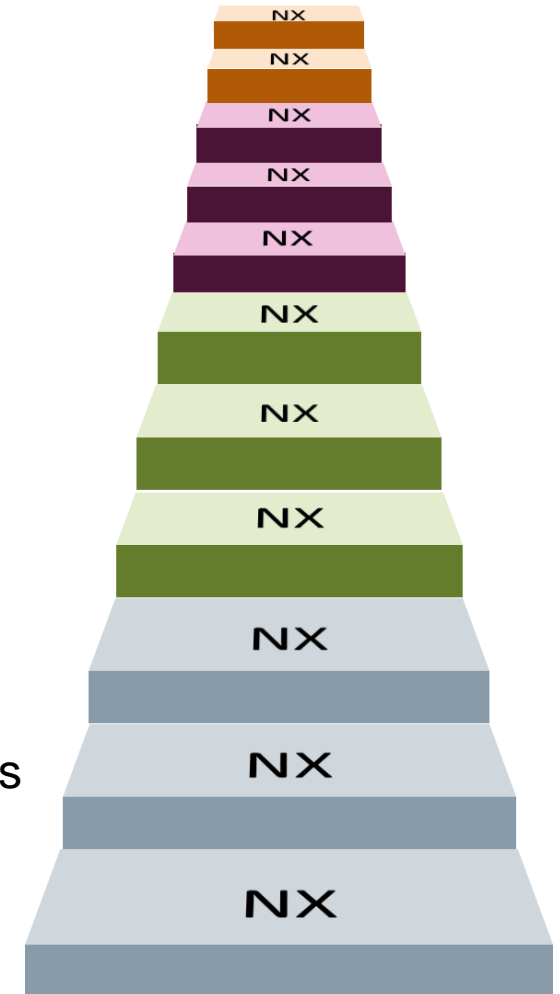


## What is Changing?

- Introduce new methodology to install, deploy and deliver continuous updates which will enable continuous improvement and user productivity
- Remove differences between current NX installation approach for enhancement release, maintenance release, maintenance pack (all are different today)
- Support both manual download/install and automatic download/install
- NX Install Configurator

## Customer Value

- End-to-end solution for installing and configuring NX
- Ease of NX upgrade
- Single seamless distribution - initial installs, updates, patches and security fixes



# NX Continuous Release - Installation and Updates

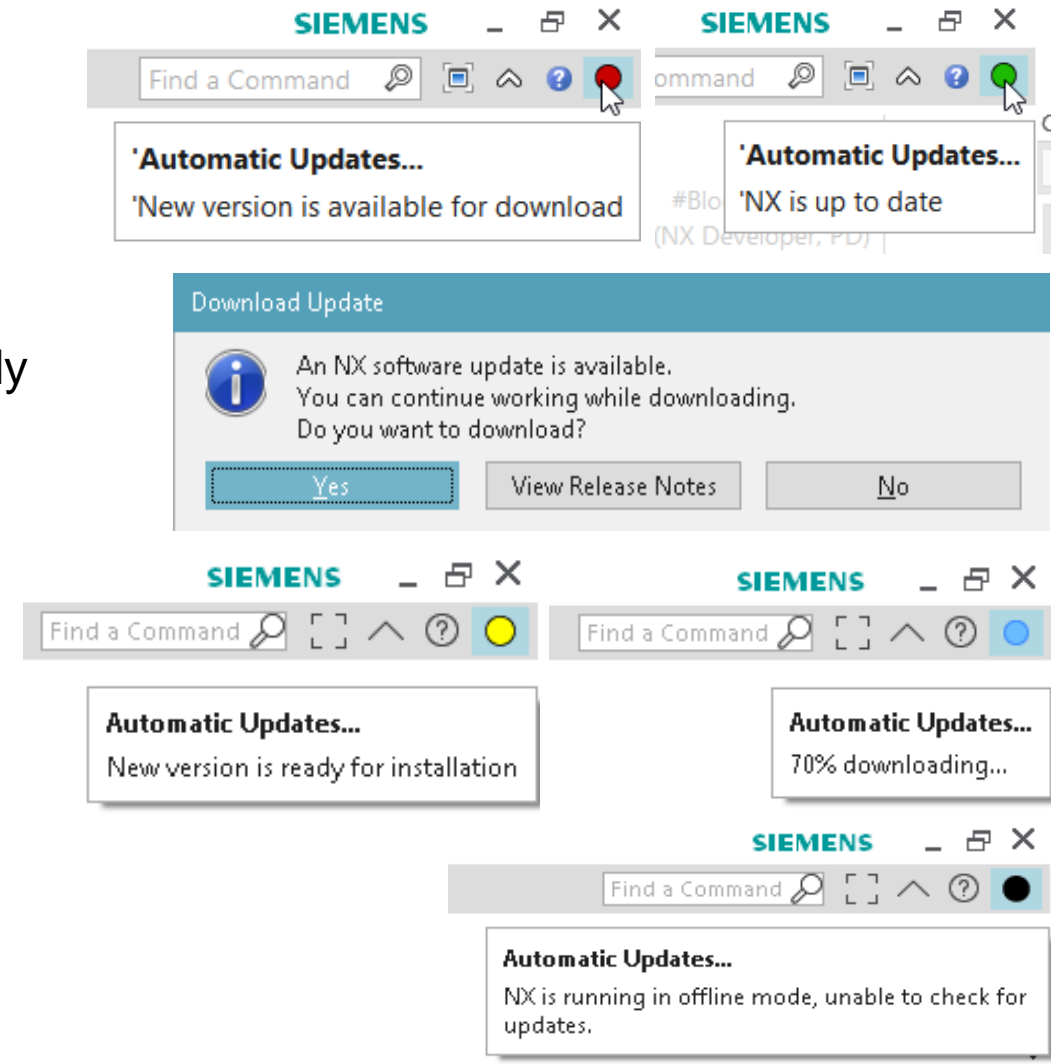
## Automatic Update Workflow Overview

### Capabilities

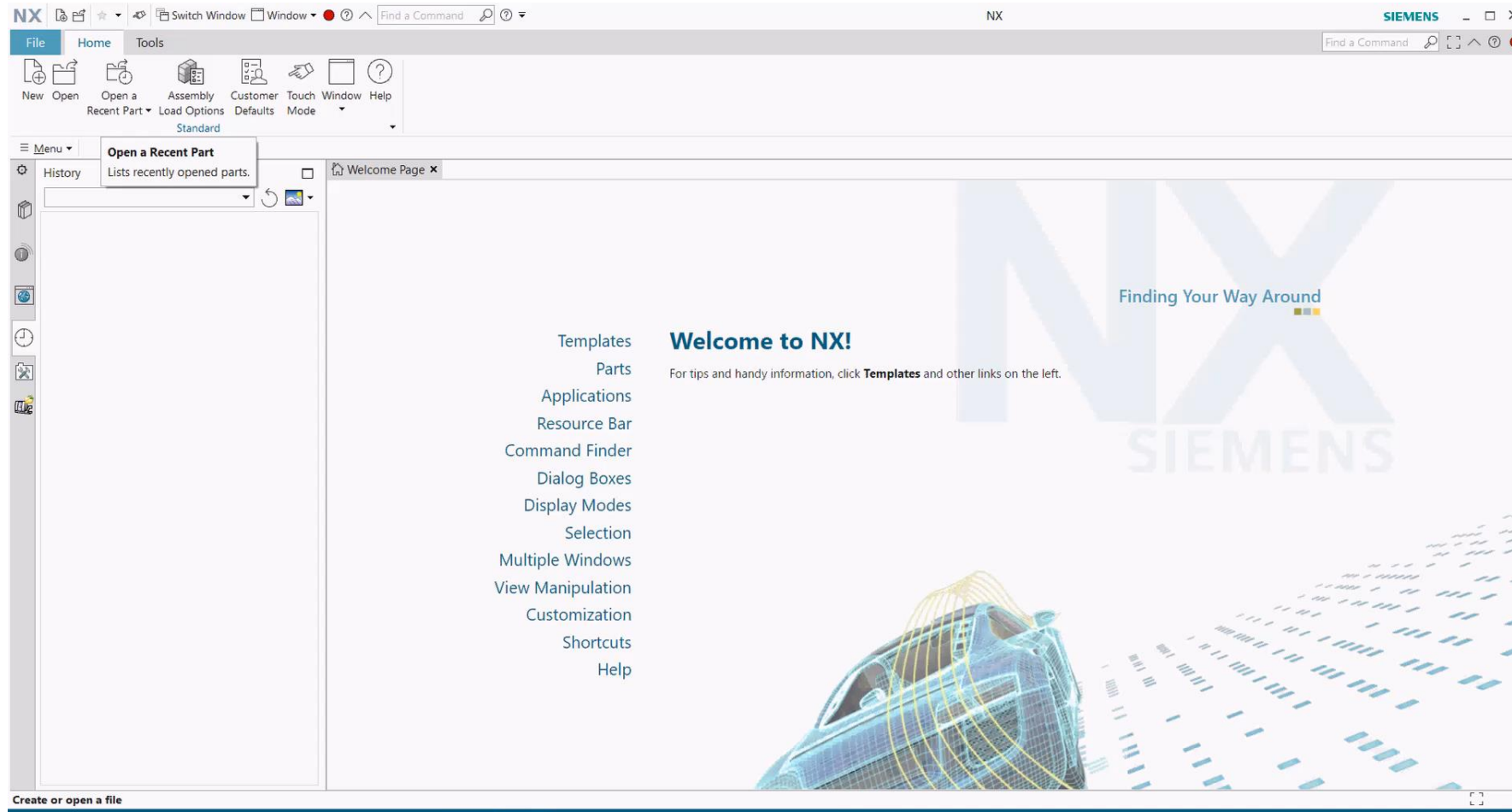
- Clients that are active and on main channel will receive automatic updates (MSI Full Install Only)
- Ability to enable/disable notification and automatic updates
- Visual indicator to notify user
- Authentication mechanism using web-key when user actually clicks on notification UI to download the available update
- Parallel processes that will run along with NX session to validate and inform user when NX update is posted and is available for download and install
- Option to receive notifications only but manual updates

**Note:** Automatic update is not mandatory, customers can still continue with their traditional process of manually downloading & installing NX using GTAC.

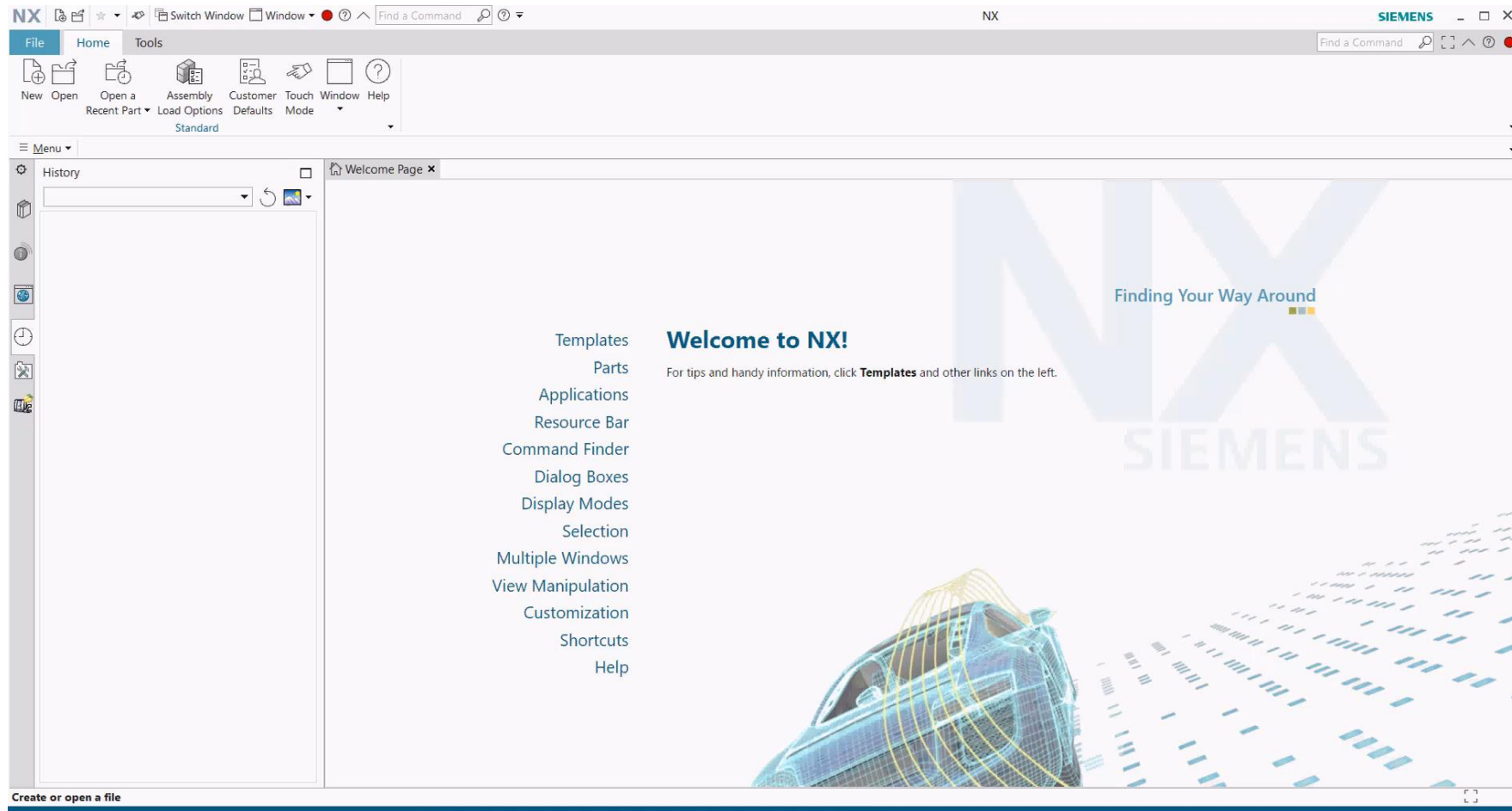
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# Automatic Notification – Demo



# Automatic Update Download and Install – Demo



## Our commitment to you

**Siemens PLM will become the first major CAD/CAM/CAE vendor to offer its customers a continuous release process**

The NX team remains committed to:

- Delivering quality releases to you
- Building solutions on the most modern architecture protecting your investment
- Our **historically proven** commitment to data compatibility



The heart of engineering has always been well-documented math-driven decisions.

## NX Maple is a new SPLM Product that allows you to:

- Accelerate simple or complex engineering calculations, including units, in a format that is easily recognizable by all engineers and analysts
- Keep critical engineering calculations under revision control within the Teamcenter PLM environment
- Easily connect math equations with existing PLM investments – including driving NX geometric designs in novel ways

The screenshot displays the SYMBOLICA software interface, which is used for engineering calculations and data management. It features a menu bar (File, Edit, View, Insert, Format, Table, Drawing, Plot, Tools, Window, Help) and a toolbar. The main workspace is divided into several panes:

- Table Pane:** Contains a metadata table with columns: PREPARED BY, DATE, REPORT NUMBER, REPORT TYPE, APPROVED BY, DATE, APPROVED NAME / ASSEMBLED, PROJECT, TITLE, and RELEASE (PASS / FAIL). The data includes Rick Hebart, 01/28/2015, XX-XXX, Study tool, James Hoffa, MM/DD/YYYY, XXX-XXX-XX, Pump, and Pump Layout Optimization Analysis, N/A.
- SUMMARY Pane:** Provides a high-level overview of the calculation, stating: "To optimize the horsepower output for the pump, we need to examine several key engineering parameters." It includes a 3D model of a pump assembly and a 2D schematic diagram of a lens with dimensions: 2.150 Lens Dia, 1.800 Stroke, 4.750 Core Length, and 2.750 Power Dia.
- Text Pane:** Lists calculation steps:
  - ▶ Step 5. Calculate lift and drag at takeoff rotation.
  - ▶ Step 6. Calculate acceleration at takeoff rotation.
  - ▼ Step 7. Balance pitching moments at takeoff rotation.
 Below the steps, it notes: "For the purpose of this calculation, a nose-up rotation is considered to be positive."
- Diagram Pane:** Shows a side-view diagram of an aircraft with various moment vectors labeled: MD (aircraft drag moment), MLwf (aircraft weight moment), Macwf (aircraft drag moment), MT (aircraft drag moment), MLh (aircraft weight moment), and MW (aircraft weight moment). A red curved arrow indicates a nose-up rotation.
- Equation Pane:** Contains the following equations:
  - aircraft weight moment (MW)
  - $gear\_to\_CGx := -0.80m$
  - $MW := mass\_at\_takeoff \cdot 9.81 \frac{m}{s^2} \cdot gear\_to\_CGx$
  - aircraft drag moment (MD)
- Variables Pane:** Lists various variables and their values, such as  $gear\_to\_CGx$  and  $MW$ .
- Plot Pane:** Displays two 3D surface plots. The top plot shows a red spherical surface. The bottom plot shows a red aspherical surface. Text below the plots reads: "And finally, we will combine the original spherical lens shape ('Spherical') with the aspherical deviation component ('Z') and plot the resultant combined surface:  $Aspherical := Calculus1:SurfaceOfRevolution(Spherical-Z, x = 0, \dots, lens\_radius, axis = vertical, output = plot, scaling = constrained, axes = framed, caption = '')$  Aspherical".

**Join us this week for a hands-on  
“Getting Started with NX Maple” session!**

NX Maple is a powerful tool that simplifies your ability to integrate and access advanced math inside your designs. NX Maple helps to connect your engineering knowledge to your design geometry to ensure design consistency based on engineering best practices.

**Drop in any time with Taylor Anderson and/or Richard Bush:**

Tuesday: 8:00 to 17:00

Wednesday: 8:00 to 11:00



## Expert information is just a click away

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