

//re.build/

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More Personal Computing mit Cortana, Ink & Cognitive Services

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#ReBuildDE

Agenda

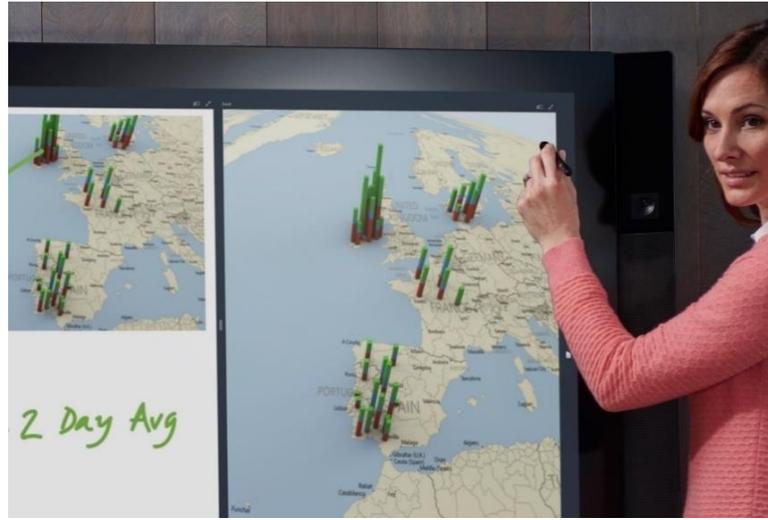
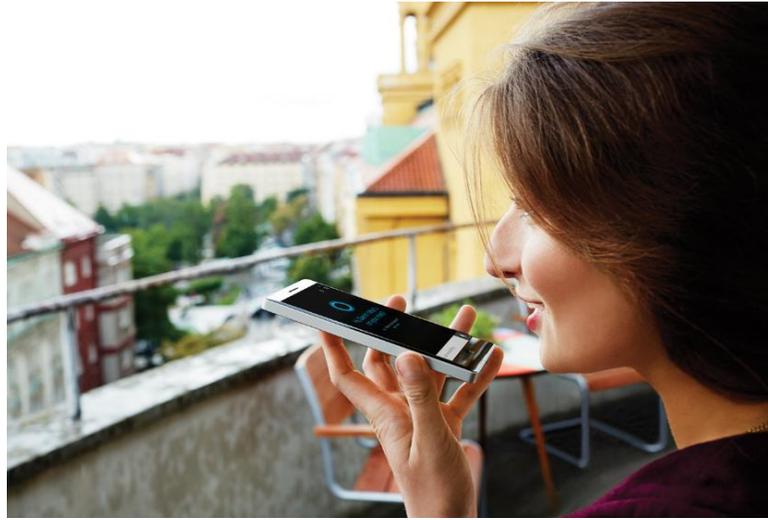
Einführung

Cortana

DirectInk

Cognitive Services

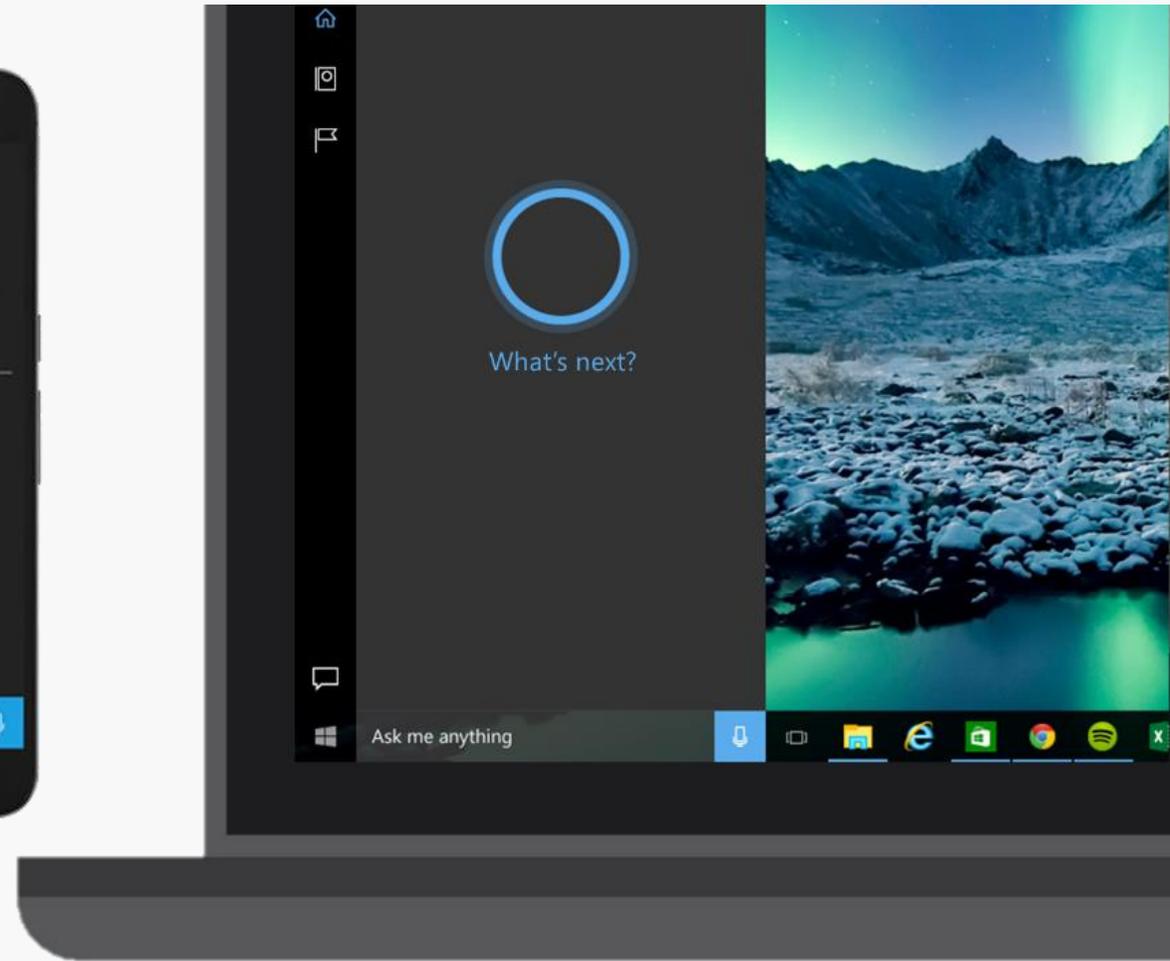
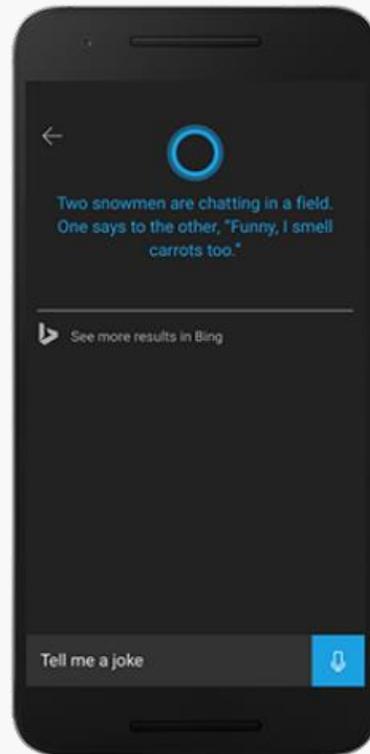
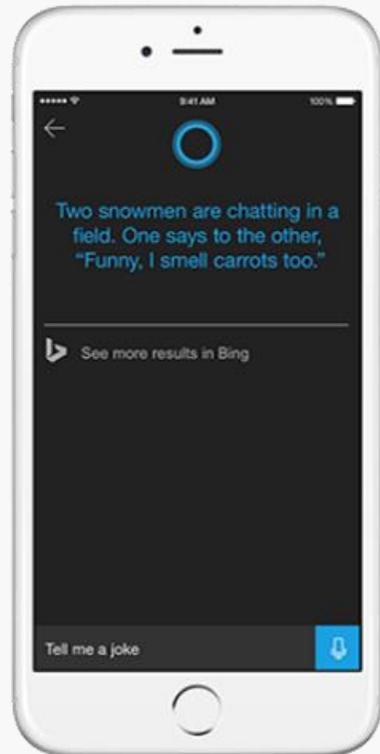
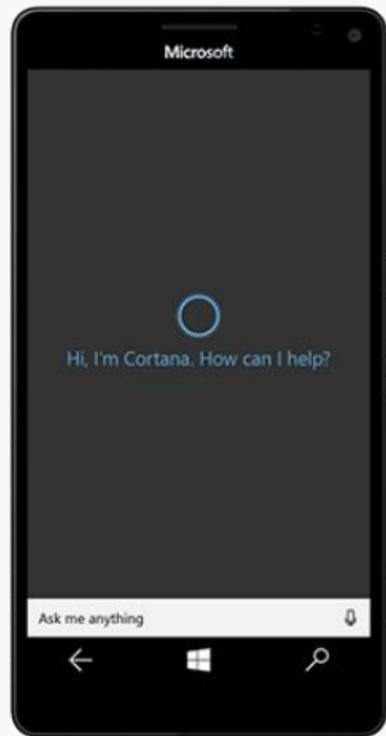
Einführung



Cortana

Cortana Across your Devices

Cortana is available on Windows 10 desktops, tablets, and phones – as well as iOS, Android and Cyanogen phones.





Say, "Hey Cortana, how tall is Mount Fuji?"

10:04

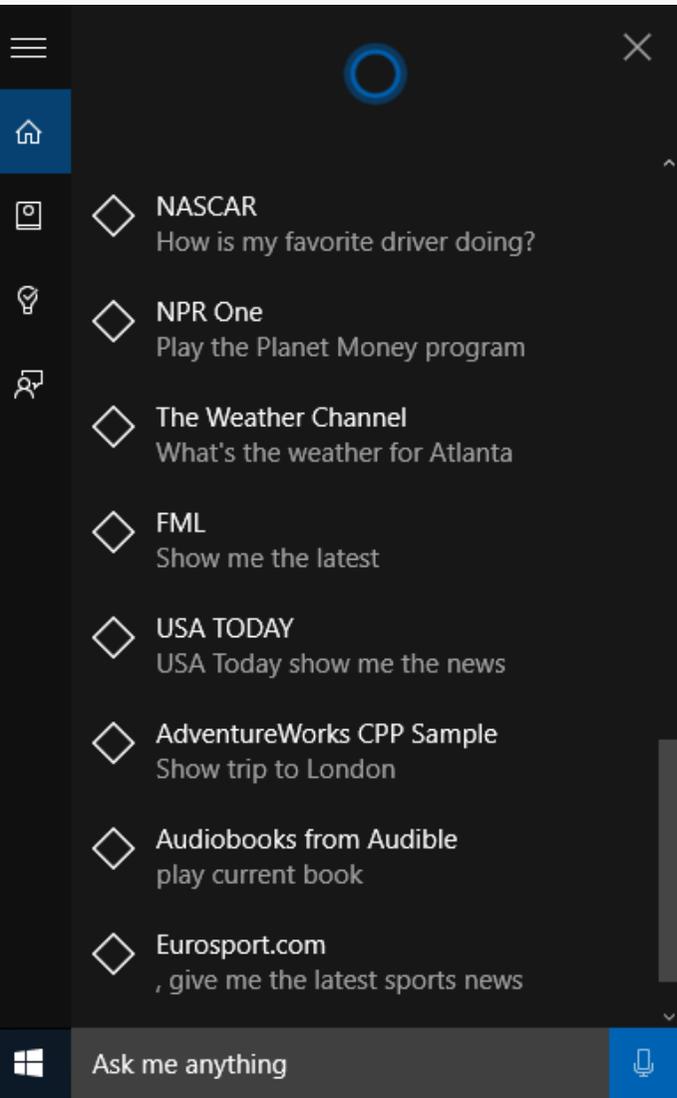
Wednesday, March 30

//build conference
Moscone Center
8:30 AM - 6:00 PM

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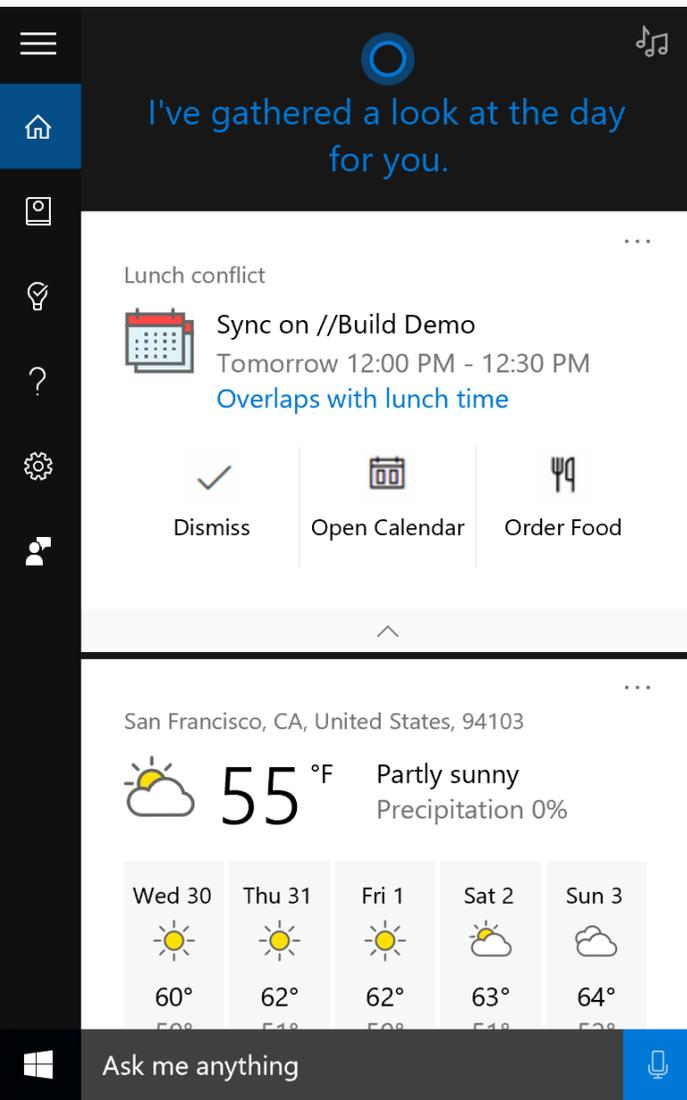


Voice Commands for Universal Windows Apps



- Apps can register voice commands for users to say to Cortana
- Cortana launches the app to complete the task
- App can use Cortana's canvas and voice to present feedback to the user
- Available for Universal Windows Apps built with XAML and JavaScript

New: Proactive Actions



Proactively suggests actions

to users, at just the right time, to drive usage of your apps and websites

Easy to register actions

in Cortana portal

Works everywhere Cortana is

starting with Windows 10 and Android



Your meeting with Ben
is during lunch.



Meet Ben
12:00 PM - 1:00 PM



Book a table



Place to-go order



Things to do



Shell PM Staff Meeting
1:30 PM - 2:30 PM



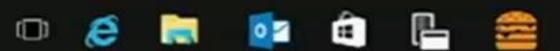
Windows User Testing
1:30 PM - 2:30 PM



Monthly Cortana+Coin Review
3:00 PM - 4:00 PM



Ask me anything

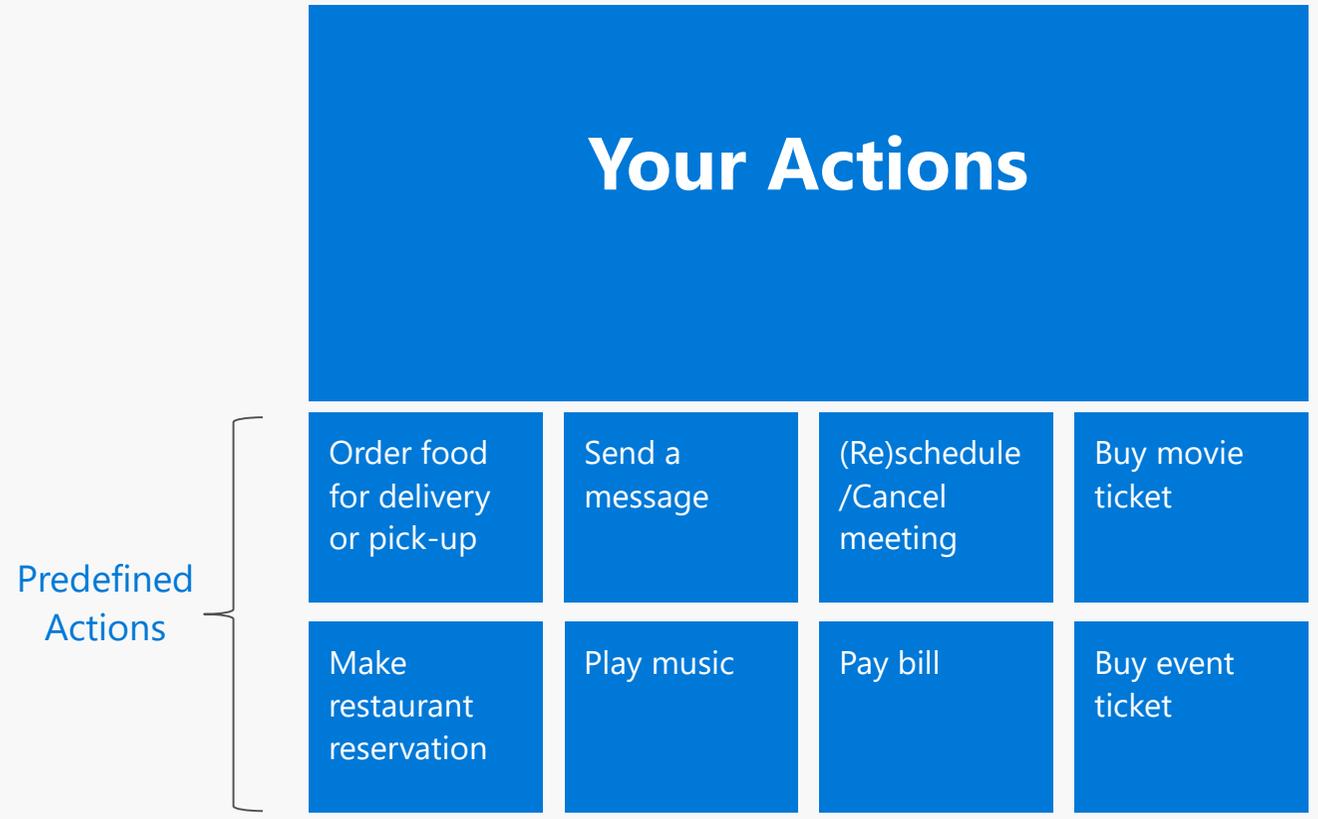


Insights and Actions

Insights

Arrive / Leave home	Arrive / Leave work	Meeting during lunch
Working late	At morning / evening	Upcoming meeting
On my way home / work	Flight has landed	Bill due date
Upcoming flight	Upcoming restaurant reservation	Upcoming movie reservation

Actions



Join the Cortana Actions developer preview

Integrate your apps with the world's most personal and extensible digital assistant



More personal, more contextual

Tap into Cortana's ability to deeply personalize its user experience based on insights gathered from the Cortana Notebook, user context, and explicit requests.



Better promotion and discovery

Promote your app and engage with users when they need you, in a timely, relevant, and helpful way



Cross platform and devices

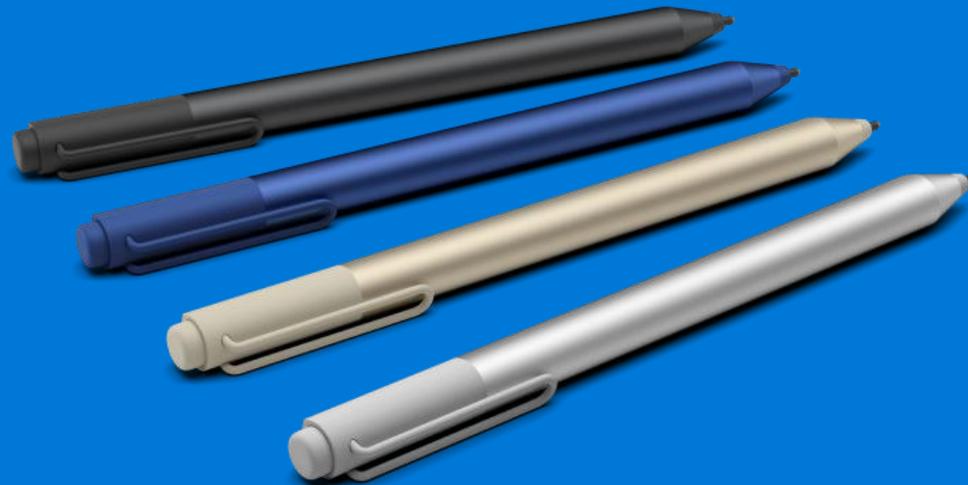
Connect users to your app across Windows devices, and websites through a unified

Be among the first to try it out

Apply to join the preview and help us make Cortana better.

[Apply for the preview program](#)

Windows Ink





Windows Ink Workspace

Windows Pen Protocol Platform Enabling Ink in Apps New Ink Building Blocks

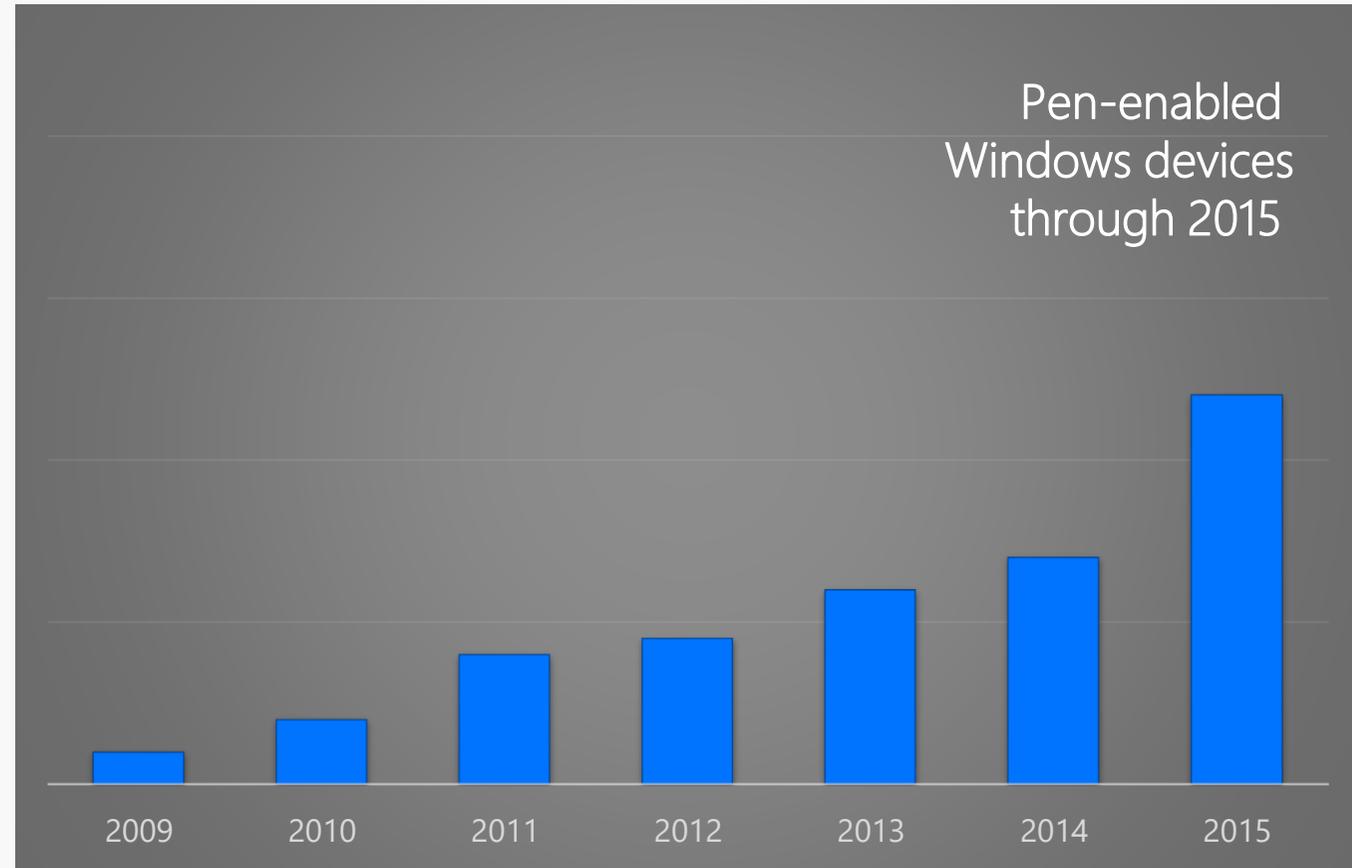


CY2017: ~20 Million Windows Tablets & 2:1 systems projected

(IDC, June 2015)

- Pen devices doubled in 2015.
- Over 50% of all Pen enabled devices are running Win10!

Pen-attached devices generally have higher satisfaction rating vs non-Pen devices



Source: Internal MSFT Data



Live Demo – Echte Welt und so

MainPage.xaml

```
<InkCanvas Name="ink" />
```

MainPage.xaml.cs

```
const int minPenSize = 2;
const int penSizeIncrement = 2;

0 Verweise
public MainPage()
{
    InitializeComponent();
    ink.InkPresenter.InputDeviceTypes = CoreInputDeviceTypes.Mouse | CoreInputDeviceTypes.Pen | CoreInputDeviceTypes.Touch;
    if(ink.InkPresenter != null)
    {
        InkDrawingAttributes drawingAttributes = ink.InkPresenter.CopyDefaultDrawingAttributes();
        var PenThickness = 1.5;
        var penSize = minPenSize + penSizeIncrement * PenThickness;
        Color inkColor = (Color)Application.Current.Resources["InkColor01"];
        drawingAttributes.Color = inkColor;

        // Ballpoint
        drawingAttributes.Size = new Size(10, 10);
        drawingAttributes.PenTip = PenTipShape.Circle;
        drawingAttributes.DrawAsHighlighter = false;
        drawingAttributes.PenTipTransform = System.Numerics.Matrix3x2.Identity;

        ink.InkPresenter.UpdateDefaultDrawingAttributes(drawingAttributes);
    }
}
```

Handwriting Recognition

```
private async void reco_Click(object sender, RoutedEventArgs e)
{
    if (ink.InkPresenter.StrokeContainer.GetStrokes().Count > 0)
    {
        var recognizer = new InkRecognizerContainer();
        var recognitionResults = await recognizer.RecognizeAsync(ink.InkPresenter.StrokeContainer, InkRecognitionTarget.All);

        string result = "";

        if (recognitionResults.Count > 0)
        {
            foreach (var r in recognitionResults)
            {
                var candidates = r.GetTextCandidates();
                result += " " + candidates[0];
            }
        }
        else
            result = "NO TEXT RECOGNIZED!";

        RecoResult.Text = result;
    }
}
```

Direct Ink: Low latency, high quality ink canvas

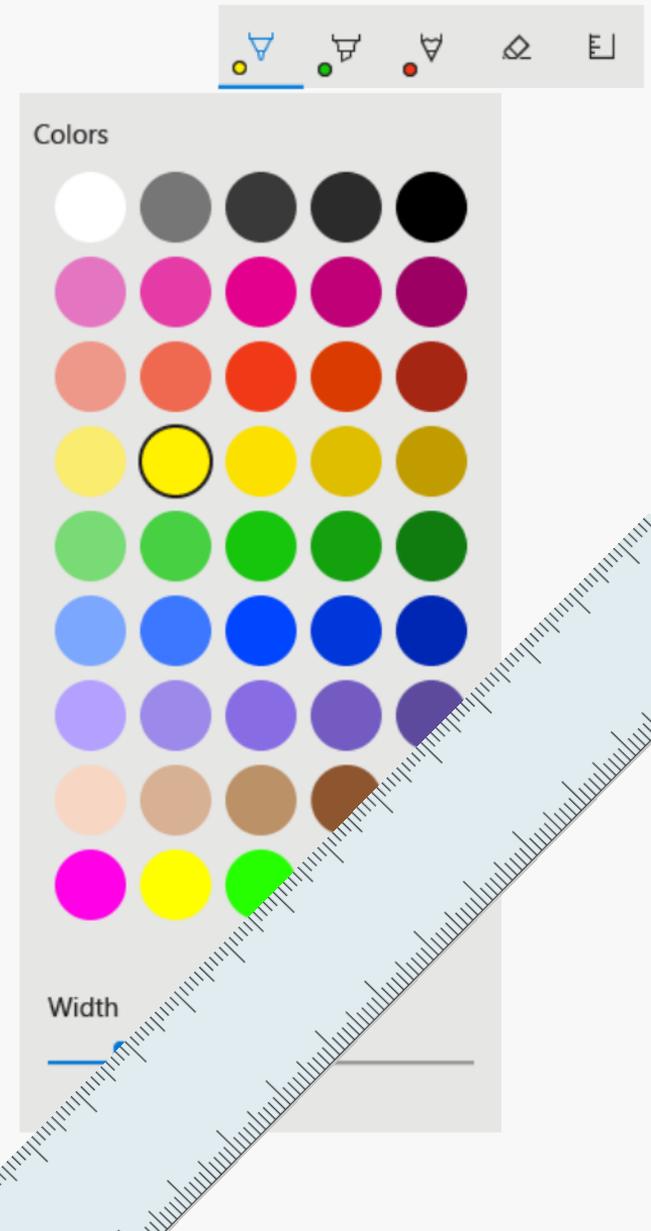
Easy: One line of code to add an ink experience

```
<InkCanvas x:Name="m_inkCanvas"/>
```

Consistent: One line of code to add ink tools*

```
<InkToolbar TargetInkCanvas="{x:Bind m_inkCanvas}"/>
```

*If you did the above, you get the ruler for "free"



Cognitive Services



41

40

27

27

Microsoft Cognitive Services

Give your apps
a human side

Cognitive Services



Vision

From faces to feelings, allow your apps to understand images and video



Speech

Hear and speak to your users by filtering noise, identifying speakers, and understanding intent



Language

Process text and learn how to recognize what users want



Knowledge

Tap into rich knowledge amassed from the web, academia, or your own data



Search

Access billions of web pages, images, videos, and news with the power of Bing APIs

Apps Powered by MS Cognitive Services

I think it's a person sitting in front of a computer and he seems 😊. I am 99% sure that's **Bill Gates**



CaptionBot.ai

CelebsLike.Me

Which Oscar nominee do you look like?

Your Oscar nominee match is...



Anthony Hopkins

Celebslike.me



ProjectMurphy.net





Cognitive Services

microsoft.com/cognitive

 Vision

 Speech

 Language

 Knowledge

 Search

Computer Vision

Custom
Recognition

Bing Spell Check

Academic
Knowledge

Bing
Web Search

Emotion

Speaker
Recognition

Linguistic Analysis

Entity Linking

Bing
Image Search

Face

Speech

Language
Understanding

Knowledge
Exploration

Bing
Video Search

Video

Translator

Text Analytics

Recommendations

Bing
News Search

WebLM

Bing
Autosuggest

Cognitive Services

microsoft.com/cognitive

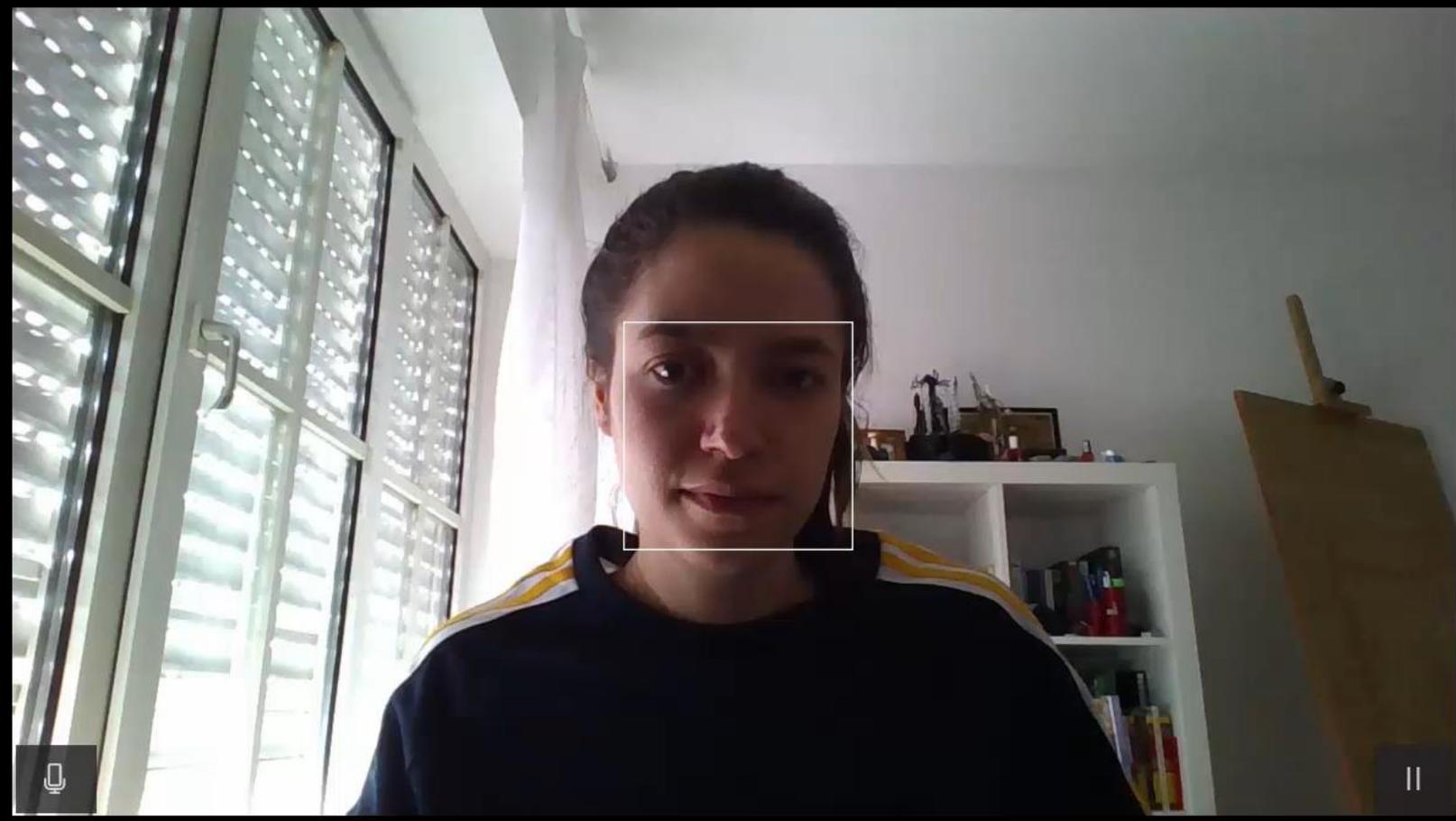
 Vision	 Speech	 Language	 Knowledge	 Search
Computer Vision	Custom Recognition	Bing Spell Check	Academic Knowledge	Bing Web Search
Emotion	Speaker Recognition	Linguistic Analysis	Entity Linking	Bing Image Search
Face	Speech	Language Understanding	Knowledge Exploration	Bing Video Search
Video	Translator	Text Analytics	Recommendations	Bing News Search
		WebLM		Bing Autosuggest



EMOTION RECOGNITION



- ← Back
- 🏠 Overview
- 👤 Training
- 👤 Recognition
- 🗨️ How-Old Kiosk
- 🛒 Intelligent Mall Kiosk
- 📶 Real-time Demo
- 😊 Emotion Recognition**
- ⚙️ Settings



Vertical Search APIs

Get more results, features and metadata tailored to each search vertical

Image Search API



<https://bingapis.azure-api.net/v5/images/search?q=shuttle+launch>

- Enhanced metadata and filters (size, license, style, freshness, color)
- Image insights (entity recognition, visually similar)

Video Search API



<https://bingapis.azure-api.net/v5/videos/search?q=viral+videos>

- Enhanced metadata and filters (price, resolution, length, freshness)
- Motion thumbnails (video preview)

News Search API



<https://bingapis.azure-api.net/v5/news/search?q=cuba>

- News by category/market, and trending news
- Rich article metadata (featured entities)

*screenshots show actual search results in bing.com

Updated Computer Vision API



Content of Image:

Categories

```
v0: [{ "name": "animal", "score": 0.9765625 }]
V1: [{ "name": "grass", "confidence": 0.9999992847442627 },
      { "name": "outdoor", "confidence": 0.9999072551727295 },
      { "name": "cow", "confidence": 0.99954754114151 },
      { "name": "field", "confidence": 0.9976195693016052 },
      { "name": "brown", "confidence": 0.988935649394989 },
      { "name": "animal", "confidence": 0.97904372215271 },
      { "name": "standing", "confidence": 0.9632768630981445 },
      { "name": "mammal", "confidence": 0.9366017580032349,
        "hint": "animal" },
      { "name": "wire", "confidence": 0.8946959376335144 },
      { "name": "green", "confidence": 0.8844101428985596 },
      { "name": "pasture", "confidence": 0.8332059383392334 },
      { "name": "bovine", "confidence": 0.5618471503257751,
        "hint": "animal" },
      { "name": "grassy", "confidence": 0.48627158999443054 },
      { "name": "lush", "confidence": 0.1874018907546997 },
      { "name": "staring", "confidence": 0.165890634059906 }]
```

Describe

```
0.975 "a brown cow standing on top of a lush green field"
0.974 "a cow standing on top of a lush green field"
0.965 "a large brown cow standing on top of a lush green field"
```

Demo



Top Sessions at //build

[B834: Cortana: Learn How Cortana's New Capabilities can Proactively Drive User Engagement with Your Apps](#)

Wednesday, March 30, 3:30pm – Moscone 2005

Paul Bloom, Keith Herold

[B833: Cortana Futures: Step-by-step on How to Teach Cortana to Proactively Engage with Your App](#)

Thursday, March 31, 5:00 pm - Moscone 2005

Dorrene Brown

[B865: Pen and Ink: Inking at the Speed of Thought](#)

Thursday, March 31, 2:00 pm - Marriott 8

Ted Miller, Scott Stacey, Xiao Tu

[B855: Cognitive Services: Build smarter, more engaging experiences with knowledge & intelligence services from Microsoft](#)

Thursday, March 31, 5:00 pm - Marriott 7

Ryan Galgon, Mike Hall, John Psaroudakis

[B878: Microsoft Cognitive Services: Give Your Apps a Human Side](#)

Thursday, March 31, 11:55 am - Marriott 9

Harry Shum

Call to Action

Cortana

- <https://developer.microsoft.com/Cortana>
- Cortana Actions: <https://msdn.microsoft.com/en-us/cortana/action>

Ink

- Blogpost: [Create, ideate, and collaborate: Build apps powered by Windows Ink](#)

Cognitive Services

- <https://www.microsoft.com/cognitive-services/en-us/apis>

Re-visit Build on [Channel 9](#)

Continue your education at [Microsoft Virtual Academy](#) online



Thank you!