Windows Academic Program

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Source Asset Management

Microsoft, Redmond

Microsoft
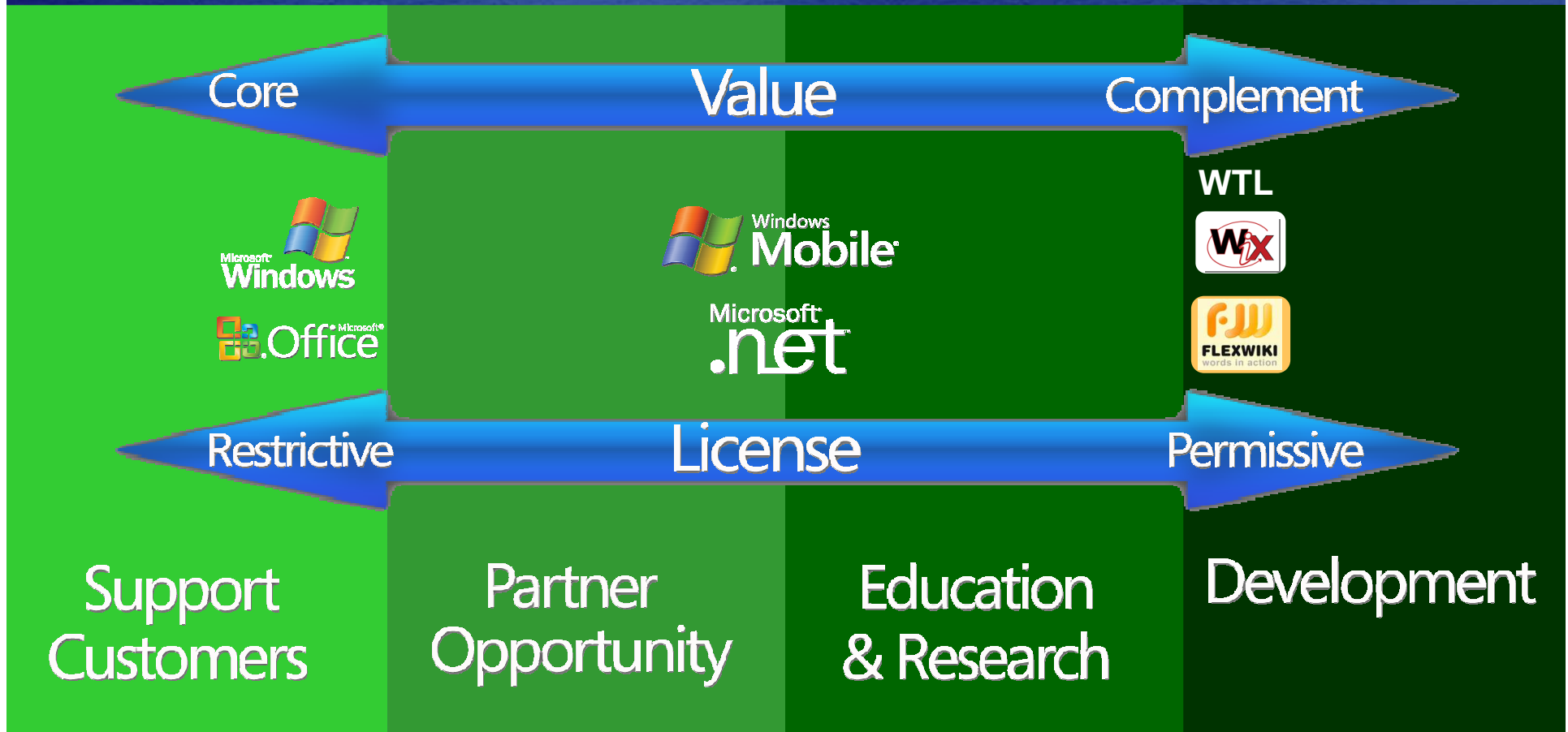
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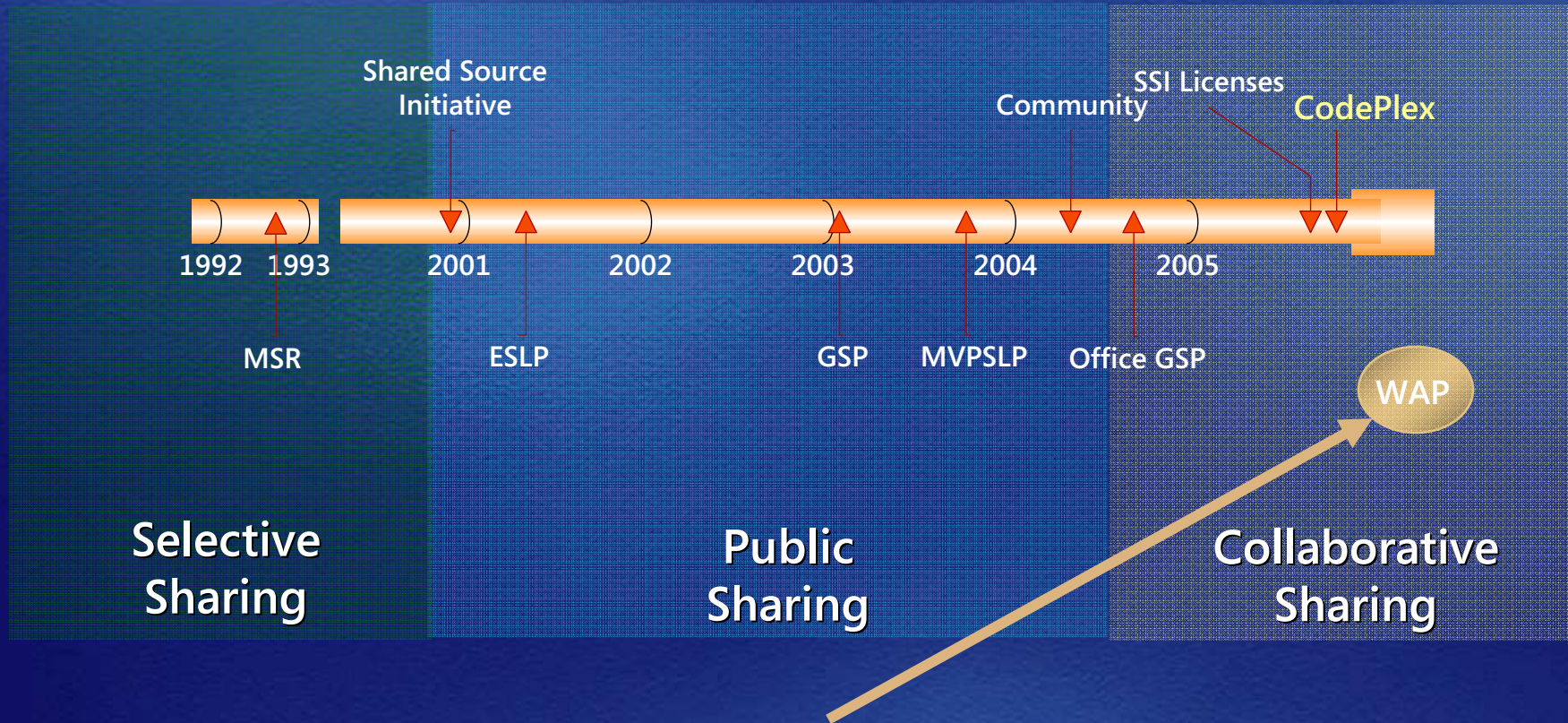*Microsoft*

What is Shared Source Initiative?

- The Microsoft Shared Source Initiative is a framework for making Microsoft source code more broadly available

- The Shared Source Initiative includes a spectrum of technologies for individuals and organizations

Microsoft

Shared Source Initiative

- Over 150 projects available
- More than 2,000,000 developers have accessed Shared Source code
- 90% of programs allow modifications and distribution rights

Core	Value	Complement

WTL

Microsoft Windows

.Office Microsoft

Windows **Mobile**

Microsoft **.net**

Wix

FLEXWIKI words in action

Restrictive	License	Permissive

Support Customers	Partner Opportunity	Education & Research	Development

Shared Source Information

- http://www.microsoft.com/sharedsource

- source@microsoft.com

Microsoft

Windows Academic Program

Overview

Microsoft

Microsoft's objectives

We help build excitement around core OS research and teaching, and we get

- Better customers, partners, and employees
- More fundamental OS innovation
- Opportunity for more university use of Windows

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Windows Academic Program Components

Windows Operating System Internals Curriculum Resource Kit (CRK) - presentation slides, experiments, labs, quizzes and assignments for introducing case studies from the Windows kernel into operating system courses.

Windows Research Kernel – the core kernel sources and binaries integrated with an environment for building and testing experimental versions of the Windows kernel for use in teaching and research.

INSTRUCTION

RESEARCH

CRK

WRK
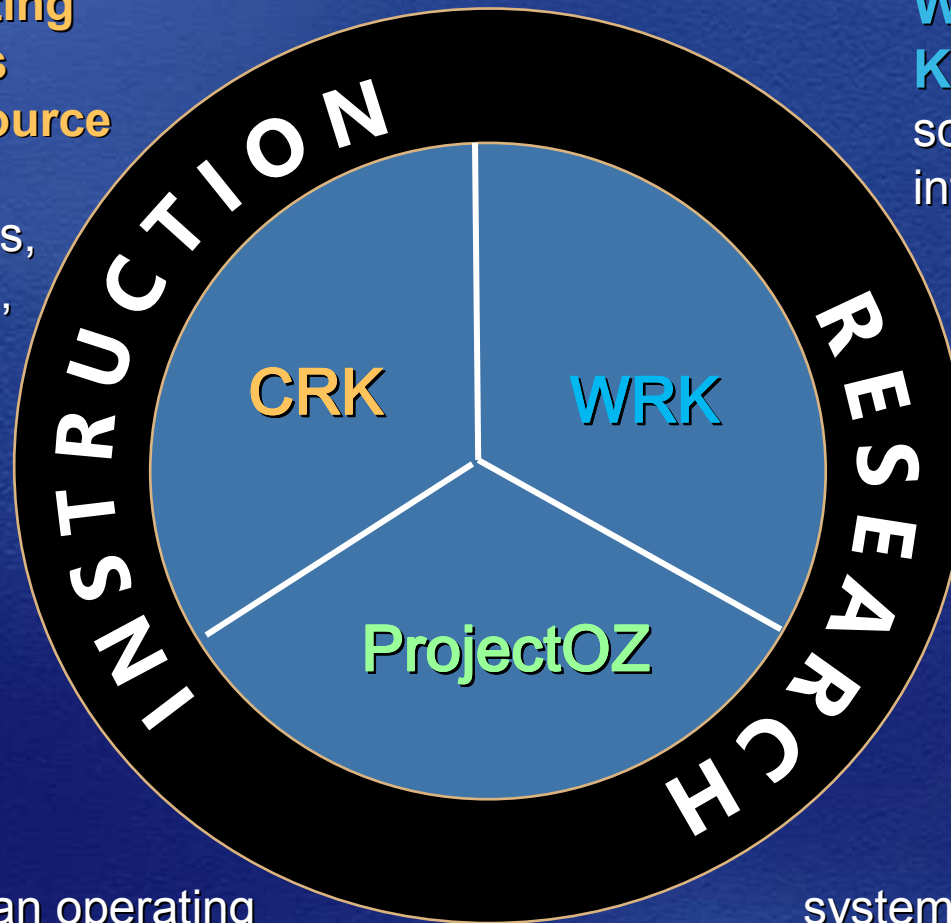
ProjectOZ

ProjectOZ - an operating systems project environment that uses the native kernel interfaces of Windows to provide simple, clean, user-mode abstractions of the CPU, MMU, trap mechanism, and physical memory that can be used to perform experiments in operating systems principles.

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CRK (Curriculum Resource Kit)

Goals:

- Pool of resources for core OS subject
    - Presentation material
    - Labs, Assignments, Quizzes
    - Sysinternals and debugging tools
- Reference material and case studies
    - advance OS classes
    - **references to WRK source code**
- Simple license
    - Non-commercial use
    - allows modifications and derivative works

Microsoft

WRK (Windows Research Kernel)

Goals:

- Make it easier for faculty and students to compare and contrast Windows to other operating systems
- Enable students to study source, and modify and build projects
- Provide better support for research & publications based on Windows internals
- Encourage more OS textbook and university-oriented internals books on Windows kernel
- Simplify licensing to allow classroom and lab use

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WRK licensing

Goals:

- Faculty feel comfortable agreeing to its conditions
- Students can use in classroom/lab environment

License type:

- Non-commercial, academic use only;
- Allows derivative works for non-commercial purpose

Eligibility criteria:

- Faculty & students in colleges/universities WW

Usage scenarios:

- View, copy, reproduce, distribute within the institution
- Modify for teaching and experimentation purposes
- Produce academic publications incl. relevant snippets of source
  - Textbooks, teaching & research publications, community forums
  - Have to perpetuate MS copyright notices
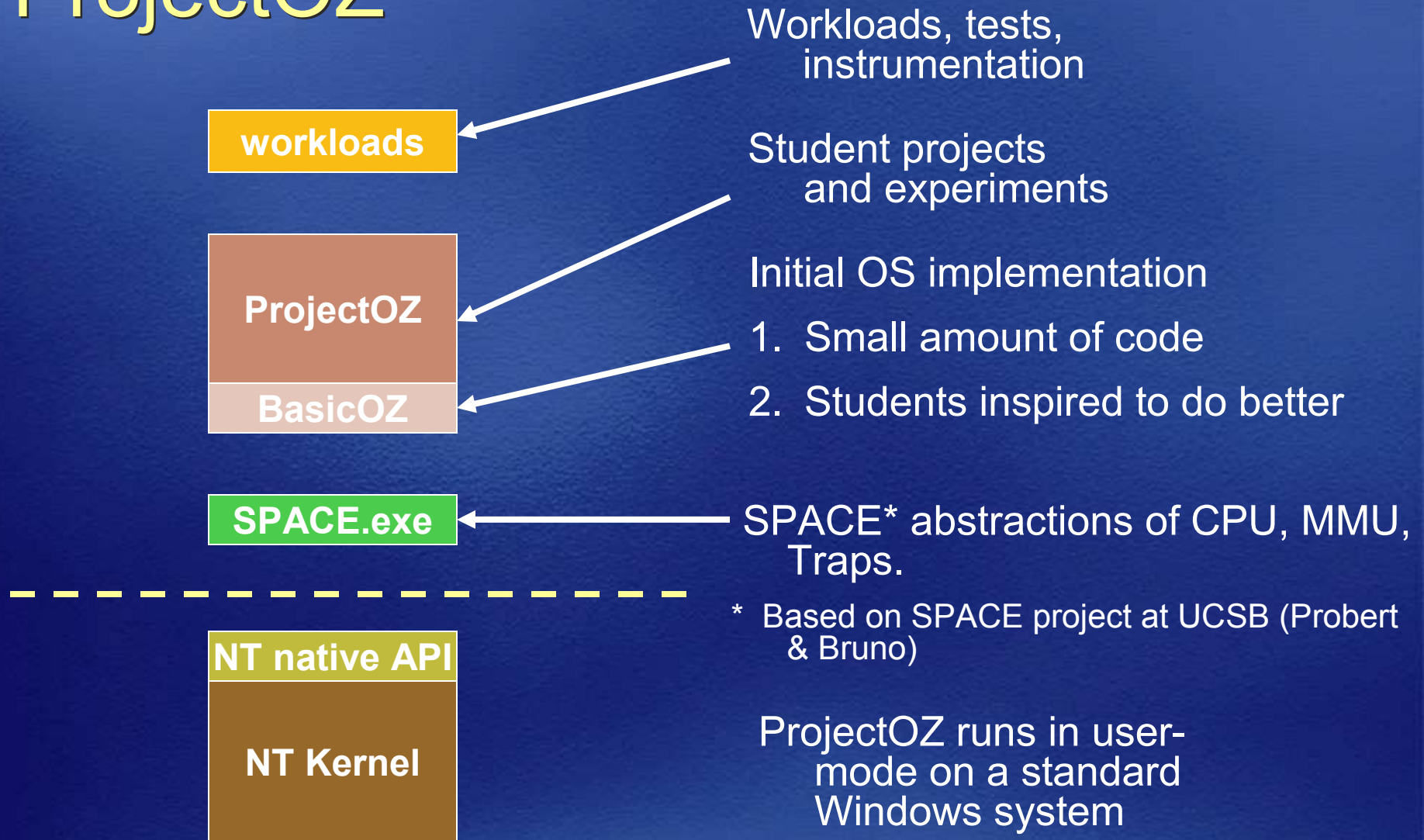- Share derivatives within academic community

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ProjectOZ

Goal - Experimental Environment for OS Projects

- An OS project environment using NTAPI
- Provides simple, user-mode abstractions
- Use real OS features rather than a 'toy' simulation
- Reduce complexity required to learn/build experiments
- A simple development environment, using standard tools for building, debugging, and instrumentation
- Supports experiments in OS principles.
- Encourage 'out-of-the-box' thinking by students

Simple license

- Non-commercial use
- allows modifications and derivative works

ProjectOZ

workloads

ProjectOZ

BasicOZ

SPACE.exe

NT native API

NT Kernel

Windows

Workloads, tests, instrumentation

Student projects and experiments

Initial OS implementation
1. Small amount of code
2. Students inspired to do better

SPACE* abstractions of CPU, MMU, Traps.

* Based on SPACE project at UCSB (Probert & Bruno)

ProjectOZ runs in user-mode on a standard Windows system

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What's next

- Support and maintain all components
- Encourage user community
    - Discussion groups and forums
    - Share feedback, projects and materials
- Enhance content and tools, i.e.
    - IDE, Languages, Projects
- Integrate with other Microsoft projects
- Refresh and update content , i.e.
    - v2/Vista
    - Feedback from faculty

➢ Please let us know what do you need and what we can help you with
    ➢ Your home at Microsoft – compsci@microsoft.com

Microsoft

Summary and Contact Information

CRK

- Available for free download from Academic Alliance Repository on MSDN
  www.msdnaacr.net/curriculum/pfv.aspx?ID=6191

ProjectOZ

- Available for free download from Academic Alliance Repository on MSDN
  www.msdnaacr.net/curriculum/pfv.aspx?ID=6547

WRK – faculty only, password protected access

- Available for download to MSDNAA departmental subscribers
  http://msdn.microsoft.com/subscriptions/
- Individual faculty can access the WRK via Faculty Connection portal
  http://www.microsoft.com/education/facultyconnection/

Feedback

- Contact us at compsci@microsoft.com

More information on WAP and related topics

www.microsoft.com/resources/sharedsource/Licensing/WindowsAcademic
- Forums for discussion and access to Windows kernel & arch team
http://forums.microsoft.com/WindowsAcademic

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