



Mobile Website Overview and Mobile Application Development Policy

**Villanova University
Office of University Communication
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I. Introduction

The use of web-enabled mobile devices by current college and high school students is growing robustly, and these students expect that mobile computing will increasingly be a part of their academic lives. This development has caught the attention of higher education, which sees smartphones and tablets as effective tools for communicating with and engaging such desirable audiences. However, many traditional higher education websites are not truly optimized for ease of use on mobile platforms. The University has created www.m.villanova.edu, a branded mobile website¹ that aggregates and delivers relevant, useable, mobile-appropriate content to a wide array of handheld devices.

In addition to the mobile website, Villanova has begun development of native applications that are compatible with iOS and Android operating systems. These native apps will be similar visually and functionally to www.m.villanova.edu, but will also have or be capable of supporting a broader variety of features because of the inherent freedom associated with programming for specific operating systems.

II. Villanova University Mobile Website

Villanova's new mobile website is a collaborative venture involving UNIT, the Office of University Communication and Modo Labs, a developer of open-source "middleware" designed to power mobile websites and hybrid native applications. Built around a framework called Kurogo,² www.m.villanova.edu will efficiently deliver campus services and information to mobile users by detecting the type of mobile device—iPhone, Android smartphone, iPod Touch, iPad or Android tablet—that is seeking the information and then adapting the desired content to provide the best possible user experience for that particular device.

¹ A mobile website is browser-based and device-agnostic. Software is downloaded to a smartphone or tablet each time a user accesses the mobile web. Native apps, in contrast, are permanently downloaded to mobile devices and must be compatible with their operating systems (e.g., iOS on the iPhone or Android on HTC handsets). A stand-alone native app is fully self-contained and often incorporates the functionality of the unique hardware or features (e.g., camera, video or global positioning) of a device. A "hybrid" native app also is downloaded and stored on a handset, but contains embedded programming that grabs fresh data from a remote server each time the app is used.

² Kurogo delivers high-quality, data-driven customizable content from a variety of sources to a wide range of mobile devices. It currently supports browser-based mobile sites as well as iOS- and Android-compatible native apps.

At a high level, www.m.villanova.edu:

- Detects the characteristics of a mobile device and then displays content best suited to that device;
- Retrieves and parses data that originates from a variety of external (typically web-based) sources;
- Delivers data in a manner that is device-agnostic and conforms to mobile web best practices;
- Allows for easy construction of consistent user interfaces;
- Gathers directory, news and event information;
- Authenticates and authorizes access to content and administrative functions; and
- Adheres to the visual identity of the University as outlined in the [Villanova University Brand/Logo Guidelines](#).

The content menu of the first iteration of www.m.villanova.edu includes the following:

- A directory
- Campus map(s)
- Events calendar
- Videos
- NOVA Alert
- Wildcard
- Dining Services
- Hyperlinks to other sites (e.g., admissions, athletics, campus shuttle and library)
- Access to the main Villanova University (non-mobile) site
- Placeholder for the Villanova Virtual Tour Project in progress

The new mobile site also meets Villanova's demand for a platform that is sufficiently flexible and scalable to evolve into a more robust online presence. UNIT can add new modules as the needs of intended users—prospective students, current students and other members of the Villanova community—dictate. The mobile web platform may also be expanded with new modules at the behest of a Villanova University office or operating unit under appropriate circumstances.

III. Developing a Mobile Application

The University desires to facilitate development and growth of the institution's mobile technology environment while also encouraging student innovation in this realm when such innovation aligns with course curriculum. At the same time, the campus community reasonably expects that mobile products published under the Villanova banner and owned by the University, whether developed by UNIT or by students with UNIT's oversight, will have a utility and value in keeping with the University's reputation as an educational leader. UNIT and the Office of University Communication have melded these concurrent objectives—learning opportunities and reputation management—into a policy for mobile application development.³

A. Going Mobile: Do I Need a Mobile App?

Please refer to Appendix I.

B. Obtaining Approval to Develop a Mobile App

Any campus unit planning to develop a mobile application under the auspices of the University and branded as a Villanova product must seek formal approval to proceed. Steps in the approval process are as follows:

1. Complete the Villanova University Mobile Application Development Approval Form⁴ (see Appendix II) available from University Communication, and submit it electronically⁵ for review by a cross-disciplinary Mobile Application Review Committee consisting of the following:
 - Joan Lesovitz, Senior Management Team, UNIT
 - Peter Bickel, Director of Marketing, University Communication
 - Nathaniel Harrison, Digital Marketing Specialist, University Communication
 - Brianne Schurott, Multimedia Specialist, University Communication

³ Although these guidelines address native applications, they are equally applicable to the development of new mobile web modules designed to expand www.m.villanova.edu. These guidelines must be followed to have a mobile application (or new mobile web module) approved and published as part of Villanova University's mobile technology suite. See also Appendix III.

⁴ This form is currently under development and will be made available electronically on the University Communication website.

⁵ Completed Mobile Application Development Approval Forms should be submitted via email to mobilecommittee@villanova.edu, attn: Nathaniel Harrison, digital marketing specialist, Office of University Communication.

2. The Mobile Application Review Committee will review the completed application form within 15 business days from the date of submission, and if all preliminary criteria have been met satisfactorily, forward the application to UNIT for a technical review.
3. When the technical review is complete and validated, the Mobile Application Review Committee will:
 - Unconditionally approve the mobile app as presented, subject to development and testing, or
 - Request additional information in writing from the developer(s), who will have up to 15 business days to respond in order to reconsider the mobile application development request, or
 - Deny development of the mobile application with a written explanation for the denial.

C. Building the Mobile App

Once a request to develop a mobile application on behalf of the University is approved, formal development of the program can begin. At this phase, the Mobile Application Review Committee will provide the developer(s) with access to additional development guidelines, including mobile application guidelines published by Apple and Google, as well as the Villanova University Brand/Logo Guidelines. The developer(s) will also be directed to UNIT staff who will serve in a technical support role throughout the development, quality assurance and implementation processes.⁶ (See Appendices III and IV.)

D. Obtaining Approval to Launch the Completed App

Once development has concluded, quality assurance testing must be completed and validated by UNIT. The fully functional version of the mobile application must be presented to the Mobile Application Review Committee for final review in a test environment. A minimum of 20 business days should be allowed for testing, and additional time may be required depending upon the scope and complexity of the app.

For the University to consider a mobile application appropriate for the Villanova University iTunes App Store and/or the Android Market, the developer(s)/sponsor of the app must establish that the work product:

⁶ Villanova University has Apple iOS and Google Android developer licenses to cover all mobile applications generated at the University that are compatible with these operating systems. iPhone and Android apps must be submitted to the Apple iTunes App Store and the Android Market, respectively, using Villanova University licenses. Mobile apps must be available free of charge on the iTunes App Store and Android Market and may not be sold.

- Conforms with the approved Mobile Application Development Approval Form on file;
- Conforms with Apple's published guidelines, which are available on the Apple developers website site, or conforms with Google's published guidelines, which are available on the Android Developers website;
- Conforms with Villanova University's mobile web guidelines, architecture, and security technical requirements (see Appendix III);
- Includes all relevant development documentation, including source code, graphical assets and audio/video assets, available upon request;
- Includes maintenance and support documentation that addresses changes to the mobile web, core mobile operating system and/or hardware, available upon request;
- Features a properly rendered Villanova University logo on the home screen according to the University's published Brand/Logo Guidelines;
- Adheres to the Brand/Logo Guidelines throughout;
- Supports specifically identified objectives and goals of the University;
- Benefits or delivers value to one or more target audiences of interest to the University;
- Includes functionality, where appropriate, that allows users to post content to social media platforms such as Facebook and Twitter; and
- Enhances the reputation of Villanova University overall.

After final testing is complete, the Mobile Application Review Committee will:

- Approve the mobile application, which officially sanctions it as a Villanova University product suitable for publication and distribution via the Villanova University iTunes App Store and/or Android Market.;
- Request further development of the app; or
- Deny distribution of the app.

If the mobile application is approved, the Mobile Application Review Committee will:

- Coordinate the mobile app distribution process, and
- Coordinate with the developer the implementation of all updates and fixes for the application(s).

This policy is subject to revision, in particular to address changes in technology as they occur.

APPENDIX I

Going Mobile: Do I Need a Mobile App?

A. Understanding Mobile

Connecting with mobile users typically occurs through mobile websites (the “mobile web”) and native mobile applications (“mobile apps,” “native apps” or just “apps”), which can be stand-alone (fully self-contained software downloaded and stored on a mobile device) or hybrid (software downloaded and stored on a mobile device that pulls data from remote servers when it runs). An app can provide key features of a traditional website, but is optimized for a mobile environment and often takes advantage of the unique hardware and features now found on typical mobile devices (e.g., global positioning, camera, microphone or gyroscope). Depending on the goals and objectives of the developer, one or more of the solutions (i.e., mobile website, hybrid native app and stand-alone app) may not be optimal or even appropriate. Finally, some mobile applications are meant for the general public, while others have utility only for a small number of consumers. Villanova University’s Mobile Application Review Committee exists to help on-campus developers determine the best solution for the University as a whole.

B. Mobile Apps Should Add Value

Any application developed on behalf of Villanova University should demonstrate tangible utility that relates directly to a campus unit or University-related function over an extended period of time. Developers should be able to answer the following questions:

- What group of individuals comprises the target audience?
- How will the envisioned mobile app make the lives of these individuals easier or better in some way?
- How will the mobile app be maintained and upgraded to remain functional and relevant?

C. Mobile Apps Should Not Be About “Visibility”

The primary objective behind developing a mobile application should not be to increase public awareness of the University or one of its campus units. Traditional paid media used to advertise or promote is vastly more cost-effective at increasing visibility and attracting attention than the development, launch and continuing maintenance of a mobile app.

D. Mobile Apps Can Be Tricky

Creating a mobile app sounds “fun” and “cool,” but the developmental process leading to launch of even a modest app can be perilous. The professional mobile app business is competitive and well-funded. Moreover, the mobile app user base has uniformly high expectations. Absent a significant commitment of resources both during the development of an app and after its release (in order to properly promote and maintain it), the end product will likely be less than stellar. Importantly, a mediocre (or worse) Villanova-branded app will do nothing to build affinity for the University or enhance its reputation.

E. Bottom Line: First Do No Harm

Creation of a mobile application should be a thoughtfully considered part of a larger digital marketing strategy. A well-researched and -executed mobile app can enhance Villanova’s image because it meets a need and delivers value. Conversely, a mediocre app can be derided for its failings and also can cause wider collateral damage to Villanova’s other digital marketing efforts by negative association.

APPENDIX II

Villanova University Mobile Application Development Approval Form

Name of Villanova campus unit (e.g., college, school, department, program or organization) for which the mobile application will be developed (this unit will be considered the mobile app sponsor):

Name and email addresses of Villanova employee(s) who will serve as administrator(s)/sponsor(s) of the mobile application and be the primary contact:

Name	E-mail
Name	E-mail

Describe what the mobile app will do and why it's needed:

Describe in detail the proposed features and functionality of the mobile app:

Identify the primary audience/user group for the mobile app (select one):

- ☐ alumni
- ☐ athletics fans
- ☐ community
- ☐ employees
- ☐ parents
- ☒ prospective students
- ☐ students

Describe how you plan to promote the mobile app:

Describe how you plan to maintain and upgrade the mobile app:

APPENDIX III

UNIT Process for Mobile Application Implementation

A. Initial Review and Prior Approval for Development

UNIT will provide support to any student, employee or department interested in developing an application for Villanova University's mobile environment.

Any proposal submitted for an initial technical review should include a functional description of the application, proposed platform/delivery method (i.e., iPhone, Android or HTML5), a list and description of major features, identification of users (e.g., current students, alumni, faculty), any software or system dependencies (e.g., Wildcard, Banner, LDAP) and any other resources or information that is pertinent but not defined here.

The technical review will reflect suggested or required changes in hardware, software or mobile technology. Accordingly, the categories listed in the previous paragraph serve as a general guide and not a final, comprehensive list. Complete and current standards and guidelines will be provided during the initial review process by the Mobile Application Review Committee.

B. Development

Throughout the development phase, the developer is expected to meet bi-weekly with a UNIT representative. The purpose of the meetings is to ensure that the mobile application aligns with the proposal and allows the developer to address any issues that may arise as work progresses. In conjunction with development of the application, detailed technical documentation, user's guides and any additional support material required by UNIT should be aggregated, written and available when the application is completed.

C. Final Technical and Security Reviews

A complete technical review after the development phase will be conducted and include, but not be limited to, the following categories: application purpose and function, security, method and techniques of execution, mobile device impact, remote server impact, local and remote data integrity, generational device and mobile operating system support, adherence to mobile application distributor guidelines and best practices, quality assurance testing, documentation and support strategy. UNIT will work with the developer to address and document requirements throughout the process.

D. Security Review

During the security review, the mobile application will be tested to ensure that it meets all current UNIT policies. If the application does not pass the security review, it will be sent back for further development with recommendations. Once the recommended changes have been made, the application can then be reassessed.

APPENDIX IV

Best Practices for Mobile App Development

Prospective developers of mobile applications for Villanova University should adopt the following best practices, as well as any others that may be discovered during conception, development or testing:

- Base your mobile app on a clearly defined concept of what prospective users should be able to accomplish with its use, with particular attention being paid to consumer benefit.
- Consider developing an app that is user-friendly on multiple devices (smartphones and tablets) and platforms (iOS and Android). The resource-intensive nature of app development and testing generally means having a goal of maximizing the base of potential consumers. Focusing on one device or operating system dramatically reduces that consumer base.
- Carefully plan the navigational scheme of your mobile application—the more intuitive, the better.
- Create wireframes. A wireframe is a stripped-down visual representation of a single page of a mobile app and is a key tool in communicating the content and layout of each page for internal and client reviews. Collectively, the wireframes serve as a blueprint to guide the work of graphic designers and programmers.
- Design with large, user-friendly buttons to facilitate navigation, particularly on the smaller screens of more compact hand-held devices.
- Conduct thorough usability tests whenever possible to determine the existence of bugs or glitches in the operation of your mobile app.
- Optimize your application (i.e., reduce its file size as much as possible) to manage download size.
- Provide a link in your mobile app to any original or complete version of content that might appear elsewhere on the Internet.