



## Foreword

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WELCOME, FUTURE SMART-DEVICE developer! Today we embark on an exciting journey. For the first time, mobile devices are impacting the lives of users in profound ways. Mobile devices have become an everyday ingredient in the lives of millions of people around the world, whether they are mobile employees working from the field or casual consumers playing the latest and greatest games. For example, my Pocket PC Phone Edition has more memory and processing power than the high-end PC I bought for a premium not even five years ago. I use my mobile device for everything from handling e-mail and browsing the Web to playing games, music, and videos. In many ways, it has replaced the heavy laptop I once lugged from meeting to meeting.

At the same time, the innovation in this space has driven the need for custom software development. With newer and more powerful devices comes the need for newer and more powerful software development tools. Driving this phenomenon—as always—is you, the software developer. To assist you, Microsoft is providing Visual Studio .NET and the .NET Compact Framework, the most capable development and runtime environments available, to enable you to make the most of opportunities with your customers, including mobile employees, casual consumers, and even the most uncompromisingly rabid device enthusiasts (our authors).

So why has mobile development become so important all of a sudden? Well, as any veteran developer can tell you, mobile development has been around for a long time. In fact, they often reminisce about the good old

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days of developing with eMbedded Visual Basic. (Hey, six months is a long time in the software industry!) The truth is that for the first time, several driving factors in the technology ecosystem have aligned to provide the solid foundation mobile-device developers need to gain true opportunities in the consumer and enterprise markets.

The first and most obvious factor driving this phenomenon is the introduction of Visual Studio .NET 2003 and the .NET Compact Framework. Combined, these tools provide a development powerhouse that enables you as a developer to take advantage of programming languages and skills you already know and use for developing desktop applications, including a rich subset of class libraries and the same secure, managed environment. You'll learn more about this in Part I, Foundations.

The next major factor is the Microprocessor Effect (also known as Moore's Law), which describes the regular doubling of the number of circuits in microprocessors. At present, circuit doubling occurs about every 18 months. In reality, the adoption of more processing power for mobile devices has exceeded the growth suggested by Moore's Law. But it hasn't been only increases in processing power that have exceeded predictions—increases in the capacity of other necessary components, such as memory and peripheral capabilities, have occurred as well.

The continued improvements in hardware capabilities coupled with the continued decrease in hardware costs have created an environment that has allowed for the proliferation of different types of mobile and embedded devices. Today, the .NET Compact Framework supports software development on the various generations of the Pocket PC, the Pocket PC Phone Edition, and the Microsoft Smartphone. It also provides great support for Windows CE-powered smart devices that run Windows CE .NET 4.1 and later.

All of this provides a great environment for developers to make the most of client-side development. You'll be able to rapidly design applications using the plethora of controls native to the .NET Compact Framework and create new controls, as you will learn about in Part II, Building the User Interface. The growth in device capacity means that mobile devices can have enough local storage to collect significant volumes of data, even when disconnected—a subject covered in this book in Part III,

Managing Device Data. The added horsepower also supports your ability to build stunning graphics, a topic that Paul and Dave address in Part IV, Creating Graphical Output.

Let us not forget, the .NET Compact Framework has native support for consuming Web Services, the industry standard for integrating applications across any platform. Through the detailed and extensive samples and discussions in this book, you will soon be an expert in building the most reliable, effective, data-driven, graphical applications; employing part-time and full-time connectivity; and using a variety of data storage solutions including SQL Server Windows CE Edition as well as integration with virtually any data source on the server.

Whether you are a seasoned Windows CE programmer, a developer familiar with using Visual Studio .NET and the .NET Framework, or someone totally new to both mobile development and .NET programming, this is the only book you will need. Whatever your background, this book provides the technical insights and coding samples you need to transfer your existing skills to the .NET Compact Framework.

This is truly an exciting time to be part of the mobile development industry. I would like to be among the first to welcome and congratulate you on joining the community of .NET mobile developers.

Happy coding!

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