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# New Technologies and Constitutional Law

Thomas Fetzer\* and Christopher S. Yoo\*\*

## Introduction

One of the most controversial issues among legal academics is the extent to which constitutional interpretation should adjust to reflect contemporary values. On the one hand, constitutions are often lauded for their relative insulation from contemporary politics and for their ability to embody fundamental commitments that do not change with the public opinion of the moment. On the other hand, proponents of a living constitution emphasize how much society's moral commitments have changed over time and point out the difficulties that can arise if constitutional principles are not permitted to evolve in response.

What has received less attention is the extent which changes in constitutional interpretation are driven not by shifts in political mores, but rather by new developments in technology. Technological innovation can affect constitutional interpretation in many ways. It can alter the factual context surrounding an existing technology in ways that raise new questions of the manner in which the constitution applies to that technology. It constantly creates new technologies that require courts to determine how existing constitutional principles apply to them. It can also present opportunities for individual self-fulfillment and personal liberty that are comparable to those given explicit constitutional protections, but that fall outside the strict letter of the constitution. In the process, technological change can cause previously latent theoretical

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conflicts to surface. These forces are likely to become increasingly important as the pace of technological change continues to accelerate.

This Chapter illustrates each of these dynamics by focusing on specific examples in which such a transformation has occurred. The examples are drawn from US and German constitutional law, not simply because those are the systems with which the authors are most familiar, but also because constitutional law in those nations provides crisp illustrations of dynamics we believe occur wherever constitutional law must deal with new technologies. Other examples could of course be given from fields such as genetic engineering and reproductive technologies, but the dynamics we describe either have or are quite likely to appear when constitutional law deals with those technologies as well. A better understanding of the potential impact of new technologies should provide a deeper appreciation of the manner in which constitutional law evolves over time.

## I. Reapplying Existing Constitutional Principles to Existing Technologies

New technologies can cause courts to rethink the way that constitutional law applies to existing technologies. One classic example is broadcast regulation. The United States has traditionally embraced a liberty-oriented vision of free speech that defines free speech in terms of freedom from government coercion (see, e.g., Berlin 1969). This vision does not permit the restriction of speech that some people find objectionable. Indeed, “the fact that society may find speech offensive is not a sufficient reason for suppressing it. Indeed, if it is the speaker’s opinion that gives offense, that consequence is a reason for according it constitutional protection” (*FCC v Pacifica Foundation*, 438 US 726, 745 (1978)). The traditional solution to low-value or dangerous speech is more speech, not government regulation (see, e.g., *Whitney v California*, 274 US 357, 377 (1927) (Brandeis, J, concurring)). Although this means that people

will sometimes encounter material they find offensive, this approach also presumes that people are sufficiently robust to tolerate such exposure. Rather than restrict the speech, US law typically expects those who are exposed to such speech unwillingly to “avoid further bombardment of their sensibilities simply by averting their eyes” (*Cohen v California*, 403 US 15, 21 (1971)).

Notwithstanding this hostility toward governmental restrictions on private editorial choices, the Supreme Court has upheld the imposition of negative content restrictions and affirmative content obligations on broadcasters. The primary justification became known as the scarcity doctrine, which held that electromagnetic spectrum placed an absolute limit on the number of people who could speak. The seminal case announcing the doctrine states, “Unlike other modes of expression, radio inherently is not available to all. That is its unique characteristic, and that is why, unlike other modes of expression, it is subject to governmental regulation” (*NBC v United States*, 319 US 190, 226 (1943)).

Characterizing broadcast channels as scarce “turn[s] speech into a zero-sum game” in which enabling any one person to speak inevitably crowds out another’s ability to do so. By suggesting that the total amount of speech is strictly limited, this characterization attempts to foreclose the classic argument that the solution to low-value speech is more speech, not government regulation (Yoo 2011). The supposed need to ensure that this limited resource is placed in its highest and best use was invoked by the US Supreme Court to uphold the imposition of affirmative content obligations on broadcasters (*Red Lion Broadcasting Co v FCC*, 395 US 367 (1967)).

The Supreme Court later recognized a second justification for restricting broadcast programming, holding that broadcasting represented a “uniquely pervasive presence in the lives

of all Americans” and is “uniquely accessible to children.” The absence of effective filtering mechanisms justified placing limits on broadcast programs deemed to be indecent (*FCC v Pacifica Foundation*, 438 US 726, 748, 749 (1978)).

Both of these rationales have been subjected to extensive academic criticisms challenging their analytical coherence (see Yoo 2003, 2010, reviewing the literature). At the same time, technological developments have begun to undercut both of these rationales. The shift to digital transmission has caused a dramatic increase in the number of television stations. The advent of cable television eliminated the inherent limitations on the number of speakers imposed by the electromagnetic spectrum (*Turner Broadcasting System, Inc. v FCC*, 512 US 622, 637, 639, 656 (1994)). Video programming is also available from direct broadcast satellite (DBS) systems such as DirecTV and BSkyB as well as from services offered by telephone companies, such as FiOS and U-verse (Yoo 2005, 2011). The shift to Internet-based distribution of video will undermine this rationale still further, as there are no natural limitations to the number of people who can speak via the Internet (*Reno v ACLU*, 521 US 844, 868, 870 (1997)). Indeed, the Supreme Court has recognized, “the market for high-speed Internet service is now quite competitive,” with “DSL providers fac[ing] stiff competition from cable companies and wireless and satellite providers” (*Pacific Bell Telephone Co v linkLine Communications, Inc.*, 555 US 438, 448 n2 (2009)).

The US Supreme Court has also exhibited considerable reluctance to extend the rationales it articulated in *Pacifica* to other communications media. For example, the Court refused to extend *Pacifica* to dial-a-porn, cable television, and the Internet in part because the would-be recipient must take affirmative steps before receiving the communication and because effective filtering technologies were available (*Sable Communications of Cal, Inc. v FCC*, 492

US 115, 127-31 (1989); *Reno v ACLU*, 521 US 844, 869-70, 877, 879 (1997); *United States v Playboy Entertainment Group, Inc.*, 529 US 803, 814-26 (2000)). Indeed, significant doubts exist as to whether *Pacifica* remains good law even with respect to broadcasting (Yoo 2003). As Justice Thomas noted in his concurrence in the first *Fox Television* decision, modern broadcasting is no more pervasive than other media, and the existence of the V-chip now gives parents who wish to screen out indecent content the ability to do so (*FCC v Fox Television Stations, Inc.*, 556 US 502, 534 & n.\* (2009) (Thomas, J., concurring)). On remand, the Second Circuit echoed both of these concerns, even going so far as to opine that the existence of effective filtering technologies rendered restrictions on broadcast indecency unconstitutional (*Fox Television Stations, Inc. v FCC*, 613 F3d 317, 326-27 (2d Cir. 2010)). In addition, *Pacifica* provides little purchase in a world increasingly dominated by video on demand, in which receiving content requires the type of affirmative steps sufficient to render indecency restrictions unconstitutional (Yoo 2003).

The mandatory deployment of the V-Chip has brought to the surface a fundamental theoretical conflict that the previous technology allowed to remain latent. Restrictions of the type upheld in *Pacifica* always enjoy the support of those who paternalistically regard indecency as low value speech unworthy of full First Amendment protection. When effective filtering remained impossible, civil libertarians could also support the decision based on viewers' inability to filter out content they did not wish to see or hear. The emergence of filters that can permit individuals to choose for themselves what content they wish to see has introduced a wedge between those who supported the constitutionality of indecency regulations out of a desire to enhance individual autonomy and more conservative voices who wish to restrict speech in the name of promoting a particular conception of the public good (Yoo 2011).

On June 21, 2012, the US Supreme Court issued its second decision in the *Fox Television* litigation, overturning the sanctions because the US Federal Communications Commission failed to give broadcasters fair notice of its decision to begin enforcing the indecency prohibition against isolated or occasional uses of expletives instead of limiting punishment to deliberate and repetitive uses occurrences. Because the Court disposed of the case on procedural grounds, it explicitly reserved judgment on *Pacifica*'s continuing constitutionality (*FCC v. Fox Television Stations, Inc.*, 132 SCt 2307 (2012)). Justice Ginsburg issued a concurrence in the judgment arguing that *Pacifica* was wrongly when it was initially decided and that “[t]ime, technological advances, and the Commission’s untenable rulings in the cases now before the Court show why *Pacifica* bears reconsideration,” citing Justice Thomas’s concurrence in the first *Fox Television* decision (*id.* at 2321). Although *Fox Television* did not properly present the issue whether *Pacifica* should be overruled, the skepticism expressed both by the Second Circuit and by two US Supreme Court Justices and the lack of support for *Pacifica* in the academic commentary suggest that the Court may well overrule that decision if presented with an appropriate case.

Quite comparable to the US case law, the German Federal Constitutional Court (Bundesverfassungsgericht) has held in a series of cases that the constitutional provision of the freedom of broadcasting in Article 5, paragraph 1, of the German Basic Law (Grundgesetz) not only protects private television and radio stations from governmental regulation, but also allows some kind of governmental content regulation.<sup>1</sup> The Court interpreted the constitutional

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<sup>1</sup> Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 28, 1961, 12 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 205 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] July 27, 1971, 31 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 314 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] June 16, 1981, 57 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 295 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Nov 4, 1986, 73 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 118 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Mar 24, 1987, 74 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 297 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 5, 1991, 83 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 238 (F.R.G.);

provision also to comprise an “objective concept of diversity of opinions” (Ladeur 2012, p. 122). According to the Court’s case law, the Freedom of Broadcast requires that the government establish a “positive legal order” that ensures the constitutionally mandated diversity of opinions (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 28, 1961, 12 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 205 (262) (F.R.G.)). The court decided that the constitutionally protected freedom of broadcast is closely linked to the freedom of speech of Article 5, paragraph 1, of the Basic Law. The Constitutional Court argued that both freedoms are of utmost importance for a democracy, which can only work if the sovereign—the people—has access to a wide variety of opinions. Moreover, the Court argued that economic competition alone would not be able to secure a broadcasting market, which provides for a diverse program that reflects all relevant groups of society.

Two main factors drove the Court’s determination: First, the number of possible television and radio channels has long been limited due to physical constraints—the scarcity of spectrum. The Court argued that it is necessary on the one hand to prevent the government from gaining control over the limited number of channels, to prevent a repetition of the experience of the Third Reich. One important factor for the Nazis successful way to obtain the power was the use of mass media, especially film and radio as propaganda tools. On the other hand the Court stated that the unregulated control of television stations by private parties, motivated simply by economic considerations, might lead to a survival of those television stations with the most sensational and scandalous programming (Bundesverfassungsgericht [BVerfG] [Federal

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Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Oct 6, 1992, 87 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 181 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 22, 1994, 90 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 60 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 17, 1998, 97 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 228 (F.R.G.); Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Sept 11, 2007, 119 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 181 (F.R.G.)



Constitutional Court] Jan 24, 2001, 103 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 44 (67) (F.R.G.)). High quality programs that contribute to the constitutionally mandated diversity of opinions would not be able to succeed economically and therefore would not be able to occupy one of the limited channels. This—according to the Federal Constitutional Court—requires government regulation of broadcasting. Hence, the Court argued, it is necessary to protect the diversity of opinions by imposing certain content regulations on private broadcasters and by establishing an independent public television system that is not motivated by profit and thereby can represent content that has no commercial value but is important for political debate.

The second factor that justifies the special regulation of broadcasting is—according to the Federal Constitutional Court—that television is so intrusive and persuasive that the government must prevent anti-democratic elements from gaining control over the few possible television stations. Otherwise those elements would have a powerful tool in their hands to fight the democratic state. Whereas the first argument pretty much resembles the case law of the US Supreme Court, the latter argument is a clear reaction to the specific historical experience in Germany with the totalitarian Nazi regime.

As a consequence the Court established the so-called “Dual Broadcasting Order.” One pillar of this dual order is the public broadcast system, which consists of regional and national television and radio stations that are funded by a mandatory monthly fee that every household must pay. These stations are insulated from governmental influence by a specific organizational structure. They also need to provide for basic broadcast services that reflect all “relevant groups of society” (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] June 16, 1981, 57 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 295 (325) (F.R.G.)). The

second pillar of the dual order consists of private broadcasters. However, to operate a television or radio station, private companies need governmental permission and need to fulfill certain content-related requirements concerning the diversity of their programs. Moreover, strict rules regulate the broadcasting of indecent and youth endangering content, which can only be broadcast during the evening hours in order to protect children.

As with US law, one would expect that the special interpretation of the Freedom of Broadcast provision in the German Basic Law by the Federal Constitutional Court would change once the scarcity problem is solved by alternative transmission technologies like cable, IPTV, satellite television, and more efficient use of the existing spectrum: If the limitation of possible fora for the presentation of different opinions is no longer an issue, content regulation of the existing forum should be lifted. Quite the opposite is true: Rather than restricting the scope of government regulation and lifting it from broadcasters, the Federal Constitutional Court has demonstrated a tendency to expand traditional broadcast regulation to the new technologies. The Court started to reinterpret the Basic Law in 2006 when it stated that the scarcity argument is not the only justification for the special broadcast regulation (*id.* at 322). Instead the Court argued that the intrusive and persuasive character of television requires special content regulations of television stations even if the number of possible stations is no longer limited. According to the Federal Constitutional Court, the intrusive and persuasive character of television distinguishes broadcasting from all other kinds of media, including the Internet. The Court argued that this fact requires governmental oversight of private television stations and the maintenance of public television stations that prevent the television landscape from being dominated by yellow-press style programs that do not contribute to the diversity of opinions (Bundesverfassungsgericht

[BVerfG] [Federal Constitutional Court] Sept 11, 2007, 119 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 181 (F.R.G.)).

In an apodictic way, the Court even acknowledges that scarcity of programs might no longer be a problem, but that this has no consequence for the justification of broadcast regulation (*id.*). Hence, the advent of new technologies has not triggered a change in the interpretation of the constitution by the court as far as the outcome is concerned, but only as far as the rationale for the special content regulation is concerned.

It remains to be seen how the Federal Constitutional Court will deal with the diversity of opinions that exist on the Internet. If scarcity and intrusiveness are the justifications for the special content regulation of television, there should be no reason to apply the traditional broadcast regulatory regime to the Internet. The Internet is not a scarce medium, nor is it any more intrusive than the print media or movie theaters since it is—unlike television, which is a push medium, meaning the audience will get a fixed program—a pull medium in which the user decides what she wants to see and when. Users—and parents as far as children are concerned—can exercise a much higher level of control over the content to which they want to expose themselves. However, some have argued that public television stations have a constitutional duty to protect the diversity of opinions in the Internet also. One argument is that the Internet provides an overabundance of content that makes it hard for users to identify valuable content. This argument flips the traditional rationale for special media regulation 180 degrees: Traditionally scarcity was the problem and content regulation was the cure; now overabundance would be the problem, but the cure would remain the same.

In short, technological change has undercut the doctrines traditionally used to justify regulating broadcasters' speech. They also have no purchase on new technologies, such as the

Internet. This has not prevented courts from expanding traditional doctrines to new technologies. Some constitutional courts have exhibited a reluctance to rescind government regulation merely because the technological basis has changed. At least in Germany, the answer to new technologies seems to be to keep the old doctrines for the old technologies and expand them to the new ones as well.

## II. Applying Existing Constitutional Principles to New Technologies

In addition to forcing courts to reevaluate the application of constitutional principles to old technologies, the process of innovation also requires courts to determine how constitutions apply to emerging technologies. Technologies that did not exist when a constitution was drafted can raise particular challenges in this regard.

A classic example is the application of constitutional protection against unreasonable searches and seizures to new means for conducting surveillance. For example, the Fourth Amendment of the US Constitution states, “The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated.” By its nature, this protection must change as the frontier of sciences continues to shift. As the US Supreme Court observed, “It would be foolish to contend that the degree of privacy secured to citizens by the Fourth Amendment has been entirely unaffected by the advance of technology” (*Kyllo v United States*, 533 US 27, 33-34 (2001)).

The initial touchstone of what constituted a search that implicated the Fourth Amendment was the physical occupation of private property. Indeed, *Olmstead v United States*, 277 US 438, 464 (1928), initially suggested that physical invasions of property represented the *sine qua non* of a Fourth Amendment violation when it held attaching wiretaps to telephone wires on public

streets did not constitute a search because “[t]here was no entry of the houses or offices of the defendants.”

The Court later overruled *Olmstead* and expanded the scope of the Fourth Amendment beyond the bounds of property law in its landmark decision in *Katz v United States*, 389 US 347 (1967), which held that the placement of an eavesdropping device in a telephone booth violated the Fourth Amendment. Subsequent Supreme Court decisions embraced the test articulated in Justice Harlan’s concurrence, which suggested that the scope of people’s Fourth Amendment be determined by their “reasonable expectation of privacy.”

The aftermath of *Katz* left a latent ambiguity. Some commentators have drawn on the language stating that “the Fourth Amendment protect people, not places” to argue that *Katz* completely displaced the property-oriented approach associated with *Olmstead* and that the scope of the Fourth Amendment was determined exclusively by reference to the reasonable-expectation-of-privacy test (see, e.g., Israel and LaFave 1993). Others suggested that the property-oriented approach remained intact and that the reasonable-expectation-of-privacy test represented an additional basis for Fourth Amendment protection that augmented the traditional rule (see, e.g., Kerr 2004).

The US Supreme Court clarified this ambiguity in *United States v Jones*, 132 SCt 942 (2012), which held that attaching a Global Positioning System (GPS) tracking device to the underside of a vehicle without a warrant violated the Fourth Amendment. After reviewing the history of its Fourth Amendment jurisprudence, the Court concluded that it did not need to address the government’s argument no search occurred because the defendant had no reasonable expectation of privacy with respect to the bottom of his vehicle. The fact that the attachment of the GPS tracking device to the vehicle constituted a trespass to Jones’s private property was

sufficient by itself to implicate the Fourth Amendment. In the process, the Court clarified that *Katz* expanded the scope of the Fourth Amendment by adding reasonable expectations to the property-oriented approach rather than displacing the property-oriented approach altogether when it noted that “the *Katz* reasonable-expectation-of-privacy test has been *added to*, not *substituted for*, the common-law trespassory test” (*Id* at 952).

Unlike the US Supreme Court, the German Constitutional Court declared the surveillance of a car with a GPS device not to violate constitutional rights (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Apr 12, 2005, 112 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 304 (F.R.G.)). The Court held that the attachment of a GPS device to a car does affect the constitutionally protected right to informational self-determination of Article 2, paragraph 1, of the German Basic Law. This right gives every individual the power to decide who knows what about the individual. Hence, the government must not collect personal data of individuals without their consent or a statutory provision (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Dec 15, 1983, 65 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 1 (F.R.G.)).

This right is not absolute, meaning that the government can collect personal information if there is a justifying reason. However, the right to informational self-determination gains the character of an absolutely protected right with respect to a core of private sphere into which the government must not intrude. Examples that fall within this core are religious beliefs and sexual orientation. The Federal Constitutional Court argued that the GPS surveillance does not touch the core sphere of privacy and therefore is permissible as long as there is a statutory basis for the GPS surveillance. Since the GPS surveillance device only affects a person when it is leaving her private sphere and enters the public sphere, the Court did not see a violation of constitutional

rights in this case. The Court argued that on the other hand GPS surveillance is a very important tool for the police and criminal prosecutors.

The Federal Constitutional Court's GPS decision is in line with its decisions on other, more traditional surveillance technologies, in which the Court has asked to what extent a surveillance technology affects the core of the private sphere of an individual and how useful the technology is for the police and criminal prosecutors. In a decision concerning the permissibility of wiretapping operation in private houses, the Court argued that every individual is entitled to a core sphere of privacy without fear of government intrusions (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Mar 3, 2004, 109 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 279 (F.R.G.)). Hence, the core sphere of privacy is constitutionally protected against all kinds of intrusions no matter what technology is used by the government. On the other hand, the government can investigate private spheres outside this core as long as there is a statutory basis for such an investigation no matter what technology is used.

The GPS decisions thus represent a particularly cogent example of how the courts apply established constitutional principles to new technologies. The new context provided by the innovation can provide the opportunity to shed new light on those principles' proper scope.

### III. Recognizing New Constitutional Rights

New technologies can also prompt the recognition of new constitutional rights. Consider, for example, remote searches of personal computers. Under US law, the result is fairly straightforward. Because the Fourth Amendment protects people's "persons, houses, papers, and effects," it encompasses personal as well as real property. Moreover, courts have concluded that people have a legitimate, objectively reasonable expectation of privacy in their personal

computers such that any remote search of that computer by a state actor implicates the Fourth Amendment (*United States v Heckenkamp*, 482 F3d 1142 (9th Cir 2007)).

This situation is quite different in Germany. In 2008, the German Constitutional Court had to address the constitutionality of so-called online-searches based on a state law of the State of North Rhine-Westphalia (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Feb 27, 2008, 120 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 274 (F.R.G.)). The statute authorized state police to conduct remote (online) searches of computers of people who were believed to be planning a crime, such as a terrorist attack. The police were allowed to search hard disks of a computer and to follow online activities that were executed on the computer in order to collect evidence.

The Court argued that the use of new technologies like the Internet has gained an unprecedented importance for personal self-determination. People no longer only meet other people in their homes, but also in their “virtual homes” like online communities. People now write diaries on computers instead of in physical books. People no longer communicate by mail or phone, but by email, instant messaging, and social networks. All those traditional activities, however, are protected by the constitution to allow the individual to develop her own personality based on the interaction with other that can be intruded by the government only under very limited conditions. The Court held that the traditional interpretation of the privacy rights of the German Constitution does not provide for an adequate level of protection against violations of the “cyber-privacy sphere” of individuals.

The Court acknowledged the utmost importance of the use of information technology systems for the development of personality of many citizens. If people are using new technologies for legal purposes, chances are that they will also use them for illegal activities.



Preserving the preexisting balance between the interests of criminal defendants and state authorities requires that those new technologies and virtual meeting points cannot remain immune from government inspection. Yet, the Court saw that surveillance of the use of such systems and the evaluation of the data stored on the storage media can be highly illuminating as to the personality of the user and may even make it possible to form a profile of that user. Hence, the Court saw a high temptation for the government to collect this kind of information on the basis of a precautionary principle.

The Court held that the guarantees contained in Article 10 of the German Basic Law (secrecy of telecommunication) and Article 13 of the Basic Law (inviolability of the home), as well as the general right of personality previously developed in the case law of the Constitutional Court, do not adequately take account of the need for protection arising as a consequence of the development of information technology. Therefore, the Court decided that the traditional interpretation of the right to personal self-determination in Article 2, paragraph 1, of the Basic Law needs to be supplemented by a new fundamental right to the guarantee of the confidentiality and integrity of information technology systems. Hence, the Court basically created a new right by interpreting an existing constitutional provision to fill a constitutional gap that was caused by the advent of new technologies that were not foreseen by the founders of the constitution. The Court decided the online-search statute to violate this “new” constitutional right based on the unproportionality of the statute authorizing online-searches.

## Conclusion

The examples discussed in this Chapter provide only the barest overview of the ways in which technological innovation can alter the scope of constitutional principles. Not only can

new technologies cause constitutional rights to expand or contract. Applying constitutional principles to new contexts can also shed new light on the rationales underlying those principles. Most importantly, the challenges posed by new technologies can lead courts to recognize new constitutional rights.

Interestingly, constitutional courts often seem reluctant to regard the emergence of new technologies as an opportunity to reduce the level of governmental regulation of existing technologies. Rather, there seems to be a tendency to expand the existing doctrines to the new technologies. One reason might be that one of the distinctive characteristics of constitutional law is—or at least should be—its consistency and stability. Constitutional courts focus on the consistency and stability of their case law and are therefore reluctant to react to new technologies too quickly. Notably, this suggests that, though constitutional courts will everywhere respond to technological change in structurally similar ways, the content of their responses will be influenced by their national constitutional traditions and so may vary quite substantially from one nation to another.

To the extent that government regulation that limits constitutionally protected rights is justified by arguments rooted in technology, a change in that technology should force the government to limit the scope of traditional regulations in order to foster the individual's liberty. Leaving these questions up to courts would open the door to arbitrary decisions on the question of which new technologies receive which kind of regulatory burden, decisions that might be in line with the court's case law, but do not reflect the current status of technology. These decisions might more properly belong to the legislature rather than to the judiciary.

On the other side, the Federal Constitutional Court of Germany has demonstrated that new technologies might provide not only be a reason to rethink existing regulation, but also a

need for new protections against government actions. If new technologies take over functions that are constitutionally protected, there can be a constitutional gap that needs to be filled—either by the legislator or by reinterpreting the existing constitution. It seems that European Courts have been more willing to create new rights out of existing provisions (Schwartz 2011). The German Federal Constitutional Court has demonstrated its willingness to interpret the constitution in such an extensive manner at least two times: In 1983 the Court developed the right to informational self-determination out of the right to personality which is protected by Article 2, paragraph 1, of the Basic Law (Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court] Dec 15, 1983, 65 Entscheidungen des Bundesverfassungsgericht [BVerfGE] 1 (F.R.G.)). This was a response to the emergence of data processing technologies, which made it possible for the government to process personal data on a large scale and thereby create personality profiles of individuals. In 2008, the Court developed the right confidentiality and integrity of information technology systems that is also rooted in Article 2, paragraph 1, of the Basic Law. At least under German constitutional law, this kind of decision lays at the center of the Federal Constitutional Law Court’s authority: The protection of fundamental rights belongs to the judiciary rather than to the legislature. New technologies therefore not only pose new challenges to the substantive constitutional law; they also raise the classic question of which branch has sufficient democratic legitimacy to develop constitutional law.

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